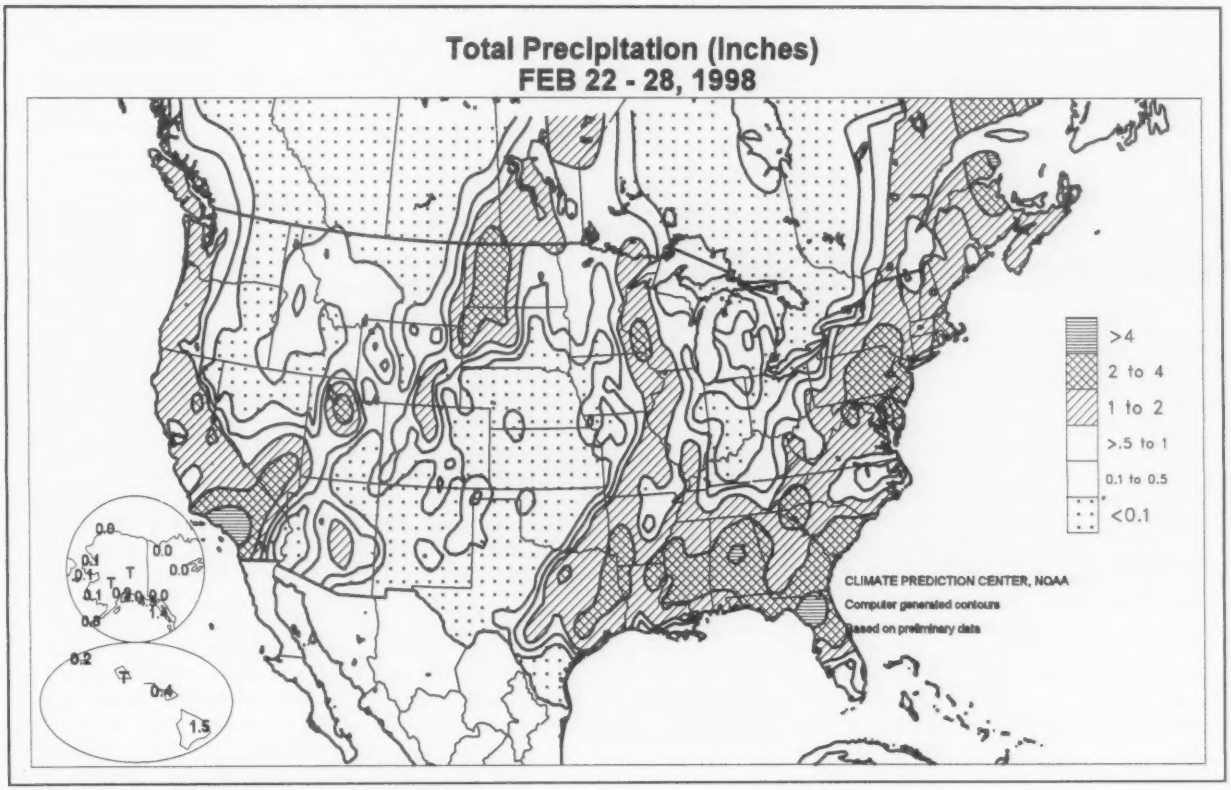
Volume 85, No. 9 March 3, 1998

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service
and World Agricultural Outlook Board



HIGHLIGHTS

February 22 - 28, 1998

A major weather-pattern change allowed **California** to dry out after an early-week deluge, but led to the development of blizzard conditions on parts of the **northern Plains**. In the **Southeast**, another major low-pressure system sparked a tornado outbreak in **central Florida** on the night of February 22-23, leaving 38 people dead, and soaked the **Gulf and Atlantic Coast States** with a 1- to 5-inch rainfall. Heavy snow fell farther inland. Late in the week, the storm responsible for the blizzard also produced showers and thunderstorms from **eastern Texas** to the **western Great Lakes States**. Much colder air settled into the **West** during the week, resulting in temperatures as much as 7°F below normal. Farther east, mild weather prevailed for the sixth consecutive week from the **Midwest** into the **Northeast**, as temperatures averaged 8 to 22°F above normal.

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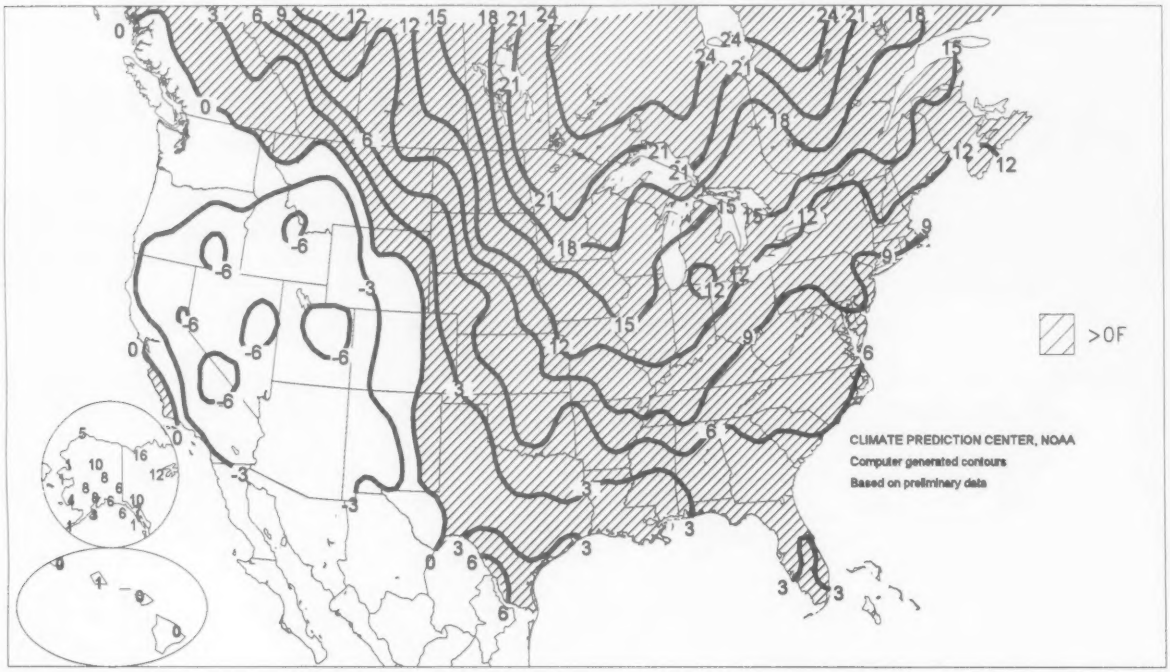
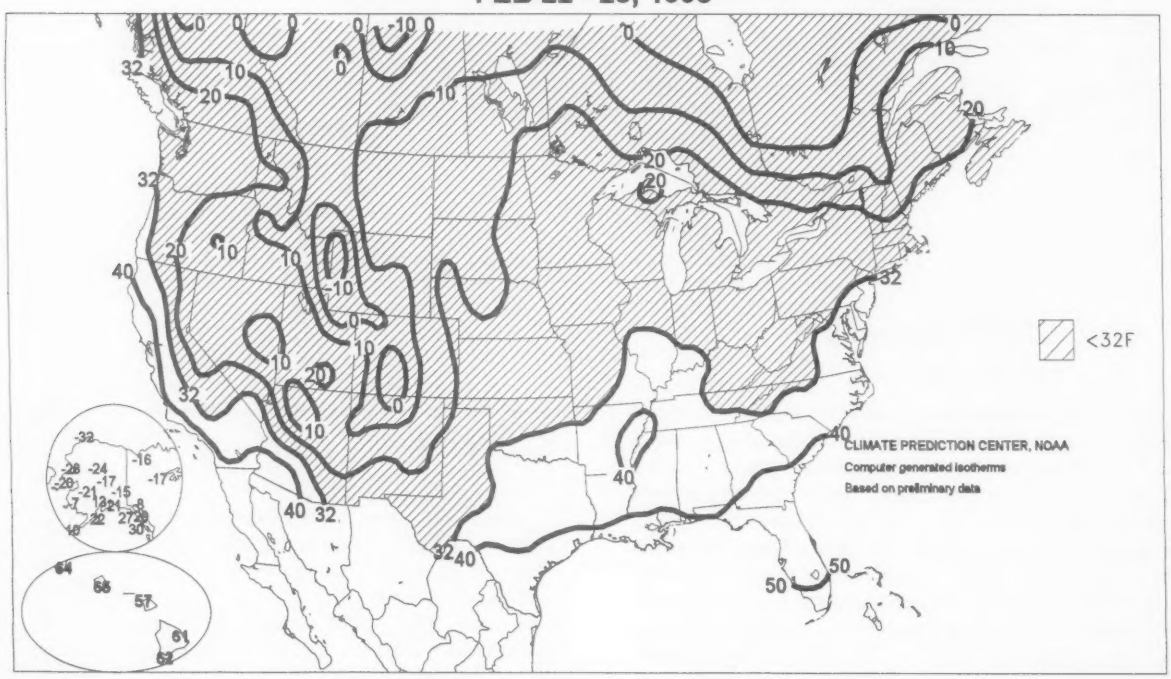
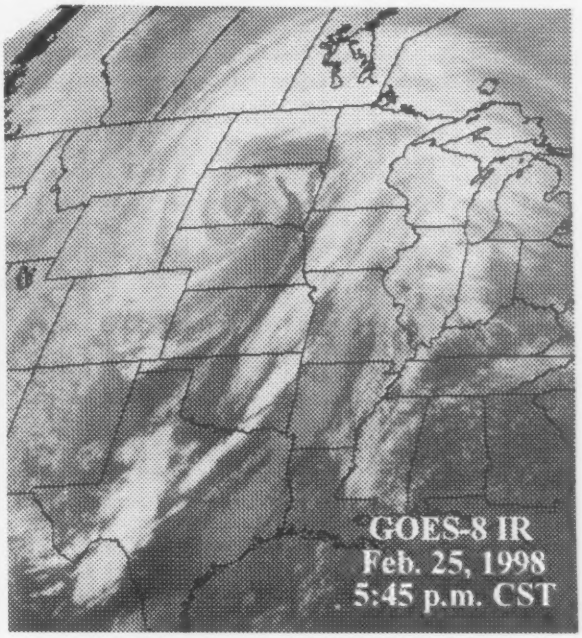
Departure of Average Temperature from Normal (°F)
FEB 22 - 28, 1998



Extreme Minimum Temperature (°F)
FEB 22 - 28, 1998





Impressive Storm: The same system that dumped 10.12 inches of rain on California's Mount Wilson in 24 hours (February 22-23) later spun through the northern Plains with a central pressure as low as 28.85 inches (977 millibars). By March 1, after 5 days of blizzard conditions, storm-total snowfall reached 84 inches in Galena, SD. The storm also dumped 19.4 inches of snow on Salt Lake City, UT (on February 24-25), propelling the city to its wettest winter month on record (4.89 inches).

(Continued from front cover)

The system in the **South** and **East**, the latest in a 20-week series of storms, traveled from near the **Mississippi Delta** on Sunday to the **New England Coast** by midweek. The storm padded February-record rainfall totals in **Wilmington, NC** (11.22 inches), **Norfolk, VA** (8.21 inches), and **Roanoke, VA** (8.00 inches). Farther inland, snowfall reached 18 inches in **northeastern Pennsylvania** and 12 inches in **Vermont**. In **New York**, February 24 totals included 18.5 inches in **Binghamton** and 13.0 inches in **Syracuse**, and storm-total snowfall reached 30 inches in **Broome County**. February 24 wind gusts were clocked to 63 mph in **Milton, MA** (Blue Hill Observatory) and 72 mph on **Maine's Matinicus Rock**. To the south, nearly a dozen tornadoes swept across **central Florida** on Sunday night, becoming the State's deadliest outbreak. Previously, 17 died in **Santa Rosa County** during the outbreak of March 31, 1962. The storm also boosted monthly record totals in **Florida** to 10.82 inches in **Tampa** and 11.12 inches in **Jacksonville**. **Tampa's** winter (December-February) precipitation was 31.03 inches, more than double the former record (14.86 inches in 1936-37), and 430 percent of normal.

On Tuesday, highs briefly surged into the 70's and lower 80's across the **central and southern High Plains**, including 77°F in **Lamar, CO** and 81°F in **Midland, TX**. Farther north, more than a dozen daily-record highs were set across the **Great Lakes States** and **Northeast**. On Thursday, highs reached 63°F in **Chicago, IL** and 68°F in **Indianapolis, IN**. Two days later, records were tied or broken in locations such as **Flint, MI** (56°F) and **St. Johnsbury, VT** (54°F). In **Omaha, NE**, temperatures remained above freezing for 10 consecutive days (February 14-23), breaking their February record of 8 days, set in 1930. Similarly, readings remained above 32°F for 12 days in a row (February 15-26) in **Des Moines, IA**, besting their previous February record of 5 days, set in 1983, 1981, and 1915. In **Wisconsin**, above-normal temperatures prevailed on 84 of the winter's 90 days in **LaCrosse**, while the winter ended with 45 consecutive days of above-normal readings in **Milwaukee**.

Farther west, **Medford, OR** had a single freeze during the month, breaking their February record of 3 days, set in 1958.

The last in a month-long series of storms struck **California** early in the week, causing additional flooding and mudslides. In the south, 24-hour rainfall rates on **Mt. Wilson** reached 10.12 inches on February 22-23. On the **San Dieguito River**, water flow over the **Lake Hodges Dam** crested at 18.64 inches above the spillway on February 24. Despite a few dry days at month's end, season-to-date rainfall through March 1 stood at 160 to 250 percent of normal at the major reporting stations. Downtown **San Francisco** netted 38.48 inches from July 1, 1997, to February 28, 1998, their highest seasonal total this century. The previous highest was 38.17 inches in 1982-83. In the **Sierra Nevada**, water content of the snowpack stood at 40 inches (165 percent of normal) on March 1, up from 20 inches (107 percent) at the end of January and 9 inches (74 percent) on January 1, 1998.

As the storm moved inland, heavy precipitation fell in the **Southwest**. In **Tucson, AZ**, monthly rainfall increased to 3.20 inches, their second-highest February total. In **Nevada, Las Vegas'** monthly total rose to 2.89 inches, surpassing their February record of 2.52 inches, set in 1993. During a 48-hour period on February 24-26, 48.5 inches of snow fell in **Alta, UT**. **Salt Lake City, UT** experienced its fourth-greatest storm-total snowfall (19.4 inches on February 24-25). Across a sliver of the **North Central States**, meanwhile, blizzard conditions developed on Wednesday, continuing through week's end. The low-pressure system deepened to 28.85 inches (977 millibars) near the **Nebraska-South Dakota border** on February 25. The same day, winds gusted to 74 mph in **Sidney, NE** and at **Ellsworth A.F.B.**, near **Rapid City, SD**. Wind chills dipped as low as -15 to -30°F in the **western Dakotas**, **northwestern Nebraska**, **eastern Wyoming**, and **eastern Montana**. By Sunday, March 1, storm-total snowfall in **western South Dakota** reached 84 inches in **Galena** and 68 inches near **Lead**, with drifts estimated at 12 feet. In **North Dakota, Minot** had 25 inches on the ground.

National Weather Data for Selected Cities

Weather Data for the Week Ending February 28, 1998

Data Provided by Climate Prediction Center (301-763-8000 EXT. 7511) and the Southern Regional Climate Center

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	66	42	74	34	54	5	2.55	1.27	1.68	20.68	138	16.58	169	99	43	0	0	3	2
	HUNTSVILLE	64	41	71	36	53	7	1.65	0.31	1.24	17.84	112	14.55	145	95	43	0	0	3	1
	MOBILE	69	46	72	38	58	2	1.21	-0.27	1.01	25.63	165	21.26	208	94	45	0	0	3	1
	MONTGOMERY	67	44	76	41	55	3	2.13	0.65	1.09	17.93	117	13.41	132	89	43	0	0	2	2
AK	ANCHORAGE	34	23	40	13	29	8	0.22	0.03	0.19	2.29	86	0.63	40	88	60	0	7	3	0
	BARROW	-6	-20	4	-32	-13	5	0.00	-0.03	0.00	0.10	29	0.02	9	80	72	0	7	0	0
	FAIRBANKS	20	-3	32	-17	9	8	0.02	-0.09	0.02	2.14	124	0.09	10	91	70	0	7	1	0
	JUNEAU	41	34	45	29	38	7	--	--	--	--	--	--	--	92	67	0	2	-	-
	KODIAK	38	30	42	22	34	3	--	--	--	--	--	--	--	84	60	0	5	-	-
	NOME	15	-5	31	-20	5	1	0.10	-0.04	0.05	2.17	96	1.22	87	79	64	0	7	3	0
AZ	FLAGSTAFF	35	16	43	-6	25	-7	0.80	0.23	0.70	5.29	81	3.44	83	91	49	0	7	3	1
	PHOENIX	63	44	73	41	54	-6	0.22	0.03	0.22	3.93	169	3.10	230	79	31	0	0	1	0
	PRESCOTT	48	28	57	20	38	-2	0.56	0.14	0.55	5.28	114	2.82	92	87	40	0	4	1	1
	TUCSON	62	41	76	33	52	-4	0.12	-0.05	0.12	6.22	238	3.34	215	82	29	0	0	1	0
	YUMA	70	49	78	45	59	-3	0.00	-0.06	0.00	4.05	397	1.26	225	74	33	0	0	0	0
AR	FORT SMITH	63	41	73	34	52	6	0.81	0.03	0.54	15.32	203	10.82	240	94	54	0	0	3	1
	LITTLE ROCK	64	43	72	37	54	7	0.83	-0.16	--	13.96	122	10.21	151	94	46	0	0	-	-
CA	BAKERSFIELD	59	42	64	39	51	-5	1.55	1.27	0.88	7.81	307	6.70	349	95	59	0	0	4	2
	EUREKA	55	44	60	41	49	0	1.08	-0.11	--	31.48	189	28.75	250	99	88	0	0	6	1
	FRESNO	59	41	62	36	50	-3	0.55	0.10	0.38	8.36	182	7.42	198	97	55	0	0	2	0
	LOS ANGELES	62	50	69	46	56	-2	3.47	2.87	1.82	21.30	325	17.58	359	80	54	0	0	3	3
	REDDING	54	40	62	37	47	-5	1.21	0.16	1.10	32.75	205	29.47	281	92	58	0	0	4	1
	SACRAM/MCCLELL	58	44	63	36	51	--	0.37	--	0.37	21.83	--	19.17	--	100	62	0	0	1	0
	SAN DIEGO	63	52	68	49	57	-2	1.46	1.07	1.26	11.69	236	10.34	308	92	62	0	0	3	1
	SAN FRANCISCO	58	48	60	43	53	0	0.88	0.14	0.71	27.30	257	22.03	293	89	64	0	0	5	1
CO	ALAMOSA	39	12	50	-2	25	-1	0.01	-0.07	0.01	0.22	22	0.04	7	85	29	0	7	1	0
	CO SPRINGS	45	20	60	10	33	-1	0.00	-0.14	0.00	0.38	33	0.28	41	71	20	0	7	0	0
	DENVER	47	22	64	15	35	-1	0.00	-0.19	0.00	0.88	50	0.27	25	64	21	0	7	0	0
	GRAND JUNCTION	43	26	62	17	35	-4	0.33	0.18	0.28	1.10	66	0.96	91	89	47	0	5	4	0
	PUEBLO	54	21	68	12	37	0	0.85	0.74	0.85	1.85	157	1.26	203	78	16	0	7	1	1
CT	BRIDGEPORT	48	36	55	33	42	9	0.98	0.18	0.80	12.00	123	8.85	138	84	58	0	0	3	1
	HARTFORD	50	33	59	29	42	11	0.80	-0.03	0.51	8.68	82	6.50	98	78	47	0	3	4	1
DC	WASHINGTON	54	41	62	35	48	7	1.25	0.54	1.00	12.43	145	10.69	197	79	49	0	0	3	1
DE	WILMINGTON	52	39	60	36	45	9	1.40	0.64	1.18	10.34	109	7.77	130	78	50	0	0	3	1
FL	DAYTONA BEACH	75	54	82	47	65	4	1.46	0.67	1.18	18.49	219	10.73	183	92	53	0	0	3	1
	JACKSONVILLE	72	52	81	44	62	5	4.21	3.22	2.53	20.46	206	10.72	148	95	51	0	0	3	2
	KEY WEST	77	68	82	58	72	1	0.55	0.11	0.55	11.42	195	7.00	183	86	65	0	0	1	1
	MIAMI	79	64	84	54	72	2	0.28	-0.26	0.24	12.92	218	7.65	187	92	60	0	0	2	0
	ORLANDO	76	54	83	46	65	3	2.76	1.96	1.54	23.70	317	11.07	208	93	56	0	0	3	3
	TAMPA	74	58	80	50	66	3	0.82	-0.01	0.57	30.77	427	15.20	301	87	60	0	0	2	1
	VALPARAISO/EGLIN	69	49	73	39	59	4	0.30	-0.84	0.30	21.34	169	15.84	188	85	46	0	0	1	0
	WEST PALM BEACH	78	61	84	50	70	2	1.27	0.53	1.15	21.24	267	16.20	296	88	57	0	0	2	1
GA	ATHENS	66	43	74	38	54	6	1.49	0.31	0.76	19.54	148	13.63	151	89	45	0	0	4	2
	ATLANTA	63	43	73	37	53	6	1.75	0.47	0.84	18.12	130	13.07	137	90	47	0	0	4	2
	AUGUSTA	66	43	76	35	54	5	2.04	0.93	0.99	20.80	177	13.86	167	95	55	0	0	5	2
	COLUMBUS	68	45	75	38	57	5	1.29	-0.01	0.79	14.03	97	7.31	78	92	44	0	0	4	1
	MACON	69	44	76	35	56	5	1.52	0.31	0.80	19.31	142	12.03	129	93	45	0	0	5	2
	SAVANNAH	70	48	76	40	59	5	2.43	1.60	1.45	18.32	187	14.33	210	97	49	0	0	4	2
HI	HILO	79	64	81	61	71	0	1.53	-1.30	0.46	11.29	35	2.44	12	90	62	0	0	7	0
	HONOLULU	80	68	82	65	74	1	0.01	-0.49	0.01	1.42	15	0.98	17	77	52	0	0	1	0
	KAHULUI	81	63	86	57	72	0	0.37	-0.29	0.28	2.35	23	0.86	12	86	58	0	0	3	0
	LIHUE	78	66	79	64	72	0	0.17	-0.61	0.07	6.53	45	3.94	43	87	63	0	0	4	0
ID	BOISE	43	28	49	22	35	-3	0.31	0.04	0.31	4.82	125	4.17	167	84	45	0	7	1	0
	LEWISTON	47	31	53	27	39	-2	0.06	-0.16	0.05	2.72	80	2.13	97	87	48	0	5	2	0
	POCATELLO	34	22	42	9	28	-4	0.39	0.14	0.31	3.98	130	3.32	169	91	62	0	7	3	0
IL	CHICAGO/O'HARE	53	35	63	31	44	15	0.27	-0.15	0.15	5.88	109	4.38	151	87	49	0	3	5	0
	MOLINE	52	36	59	29	44	15	1.44	1.03	0.89	7.45	149	5.69	205	94	61	0	2	4	1
	PEORIA	54	37	60	30	45	15	0.78	0.33	0.64	7.12	132	5.18	176	94	53	0	3	3	1
	ROCKFORD	52	33	61	29	43	16	0.64	0.28	0.53	4.69	104	3.85	158	91	55	0	4	3	1
	SPRINGFIELD	55	39	62	33	47	14	0.76	0.20	0.73	6.89	114	5.13	155	92	52	0	0	2	1
IN	EVANSVILLE	60	37	69	32	49	11	0.16	-0.76	0.08	7.03	74	4.69	81	86	40	0	1	4	0
	FORT WAYNE	52	32	58	26	42	13	0.17	-0.38	0.13	7.17	107	5.44	144	94	58	0	4	3	0
	INDIANAPOLIS	58	36	68	31	47	13	0.07	-0.65	0.04	5.02	62	3.69	77	88	43	0	3	2	0
	SOUTH BEND	52	31	57	24	41	12	0.41	-0.13	0.24	7.63	103	5.53	134	89	53	0	4	3	0
IA	BURLINGTON	55	40	64	32	47	17	1.25	0.85	0.91	6.90	158	5.38	224	85	56	0	1	3	1
	CEDAR RAPIDS	49	35	58	27	42	15	1.37	1.03	0.67	4.47	123	3.31	163	94	69	0	3	4	1
	DES MOINES	49	36	58	26	42	14	0.34	-0.02	0.13	3.65	108	2.29	111	90	63	0	2	6	0
	DUBUQUE	48	35	54	27	41	16	1.86	1.43	0.90	5.06	112	3.98	155	92	66	0	1	4	2
	SIOUX CITY	48	31	63	24	40	12	0.05	-0.21	0.04	1.41	69	1.20	96	86	58	0	4	2	0
	WATERLOO	48	36	56	26	42	18	0.73	0.37	0.45	3.17	100	2.52	135	91	71	0	2	6	0
KS	CONCORDIA	52	33	67	27	43	8	0.02	-0.28	0.02	4.13	191	2.38	180	86	51	0	3	1	0
	DODGE CITY	56	31	69	25	43	6	0.00	-0.22	0.00	3.67	207	1.07	96	80	35	0	3	0	0
	GOODLAND	49	28	63	24	39	4	0.00	-0.15	0.00	1.30	111	0.76	100	72	35	0	5	0	0
	TOPEKA	56	37	69	30	47	11	0.10	-0.25	0.09	4.07	119	1.67	84	87	46	0	1	2	0

Based on 1961-90 normals

Weather Data for the Week Ending February 28, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	57	35	70	25	46	8	0.00	-0.35	0.00	4.00	136	1.35	77	82	40	0	2	0	0
KY	JACKSON	58	39	76	30	49	9	0.64	-0.39	0.22	10.52	88	8.31	109	85	43	0	1	5	0
	LEXINGTON	58	38	72	30	48	10	0.23	-0.68	0.12	9.23	92	6.55	108	90	47	0	2	5	0
	LOUISVILLE	61	39	70	34	50	11	0.21	-0.73	-	11.58	118	8.26	134	88	50	0	0	3	0
	PADUCAH	62	40	69	35	51	10	1.10	0.02	1.08	10.16	86	7.70	107	89	46	0	0	2	1
LA	BATON ROUGE	67	45	76	40	56	0	2.22	0.86	1.33	27.02	169	20.70	198	97	54	0	0	3	2
	LAKE CHARLES	67	45	73	40	56	0	2.08	1.24	1.12	20.92	159	15.20	188	98	56	0	0	4	2
	NEW ORLEANS	69	49	74	46	59	2	1.79	0.31	1.51	26.13	155	23.58	213	90	52	0	0	2	1
	SHREVEPORT	67	44	74	38	56	3	2.50	1.54	1.93	19.14	160	13.04	167	91	40	0	0	2	2
ME	CARIBOU	36	24	43	6	30	15	0.87	0.37	0.71	9.26	122	6.44	148	94	79	0	5	4	1
	PORTLAND	44	32	51	22	38	12	1.48	0.61	1.18	12.66	111	10.09	147	87	63	0	2	2	1
MD	BALTIMORE	54	37	61	30	45	8	2.01	1.21	1.56	14.12	147	12.07	195	85	51	0	2	4	1
MA	BOSTON	46	35	53	31	41	8	2.75	1.84	2.24	12.73	113	10.41	144	89	70	0	1	4	1
	WORCESTER	44	32	55	26	38	11	1.99	1.10	0.82	15.33	137	13.01	182	88	58	0	4	5	2
MI	ALPENA	40	29	52	23	34	14	0.02	-0.34	0.02	5.15	104	4.42	151	93	64	0	6	1	0
	GRAND RAPIDS	49	30	54	25	39	13	0.24	-0.18	0.17	6.43	105	5.45	167	94	58	0	5	4	0
	HOUGHTON LAKE	43	27	52	20	35	14	0.31	-0.02	0.27	3.42	74	3.08	115	96	58	0	6	3	0
	LANSING	49	27	56	22	38	12	0.33	-0.07	0.17	6.52	126	5.63	198	94	58	0	6	3	0
	MARQUETTE	42	27	46	18	34	18	0.06	-0.41	-	6.25	98	3.85	99	94	54	0	5	-	-
	MUSKEGON	50	31	57	24	41	14	0.84	0.43	0.51	5.54	81	4.32	112	92	51	0	5	4	1
MN	DULUTH	39	32	49	30	36	20	2.13	1.86	1.03	4.52	138	4.12	204	94	74	0	3	5	2
	INT'L FALLS	41	31	47	27	36	24	0.68	0.51	0.29	1.76	74	1.53	101	94	71	0	4	5	0
	MINNEAPOLIS	46	35	54	29	40	18	0.77	0.49	0.49	2.72	94	2.41	132	91	68	0	3	5	0
	ROCHESTER	44	33	52	26	38	17	0.63	0.38	0.35	2.79	109	2.41	159	91	71	0	4	4	0
	ST. CLOUD	47	35	55	29	41	22	0.63	0.43	0.51	1.76	80	1.54	113	91	61	0	2	4	1
MS	JACKSON	64	43	73	37	53	3	1.53	0.30	1.00	19.53	123	13.76	139	98	50	0	0	4	2
	MERIDIAN	66	41	73	34	53	2	0.66	-0.82	0.52	21.07	126	16.36	154	98	44	0	0	3	1
	TUPELO	64	43	71	36	54	6	1.30	0.02	0.88	15.91	101	12.20	127	95	42	0	0	3	1
MO	COLUMBIA	56	39	66	30	47	12	0.60	0.03	0.59	6.73	117	4.95	150	89	56	0	1	2	1
	KANSAS CITY	56	39	66	32	48	12	0.04	-0.33	0.04	4.28	113	1.94	88	83	47	0	2	1	0
	SAINT LOUIS	58	40	66	36	49	11	0.70	0.05	0.69	7.85	110	5.80	148	83	48	0	0	2	1
	SPRINGFIELD	56	36	65	27	46	7	0.99	0.31	0.57	10.12	142	6.97	176	90	52	0	3	2	1
MT	BILLINGS	41	25	51	17	33	1	0.22	0.04	0.22	1.43	61	0.86	55	84	34	0	8	1	0
	BUTTE	33	6	43	-9	19	-6	0.23	0.12	0.13	1.48	106	1.33	143	91	49	0	7	3	0
	GLASGOW	41	25	53	17	33	11	0.02	-0.06	0.02	0.42	41	0.41	64	79	43	0	6	1	0
	GREAT FALLS	37	16	47	5	26	-4	0.23	0.07	0.15	1.37	59	1.04	70	90	50	0	7	2	0
	KALISPELL	39	24	46	20	31	2	0.09	-0.16	0.03	1.90	44	1.33	51	92	53	0	7	5	0
	MILES CITY	40	24	54	19	32	5	0.28	0.17	0.14	0.88	42	0.66	67	85	54	0	7	2	0
	MISSOULA	37	24	42	15	30	-1	0.07	-0.12	0.06	2.11	66	1.78	87	90	56	0	7	2	0
NE	GRAND ISLAND	48	31	65	23	39	8	0.04	-0.22	0.03	1.24	66	0.83	69	88	52	0	5	2	0
	LINCOLN	52	32	69	25	42	11	0.00	-0.27	0.00	2.74	129	2.01	161	88	50	0	4	0	0
	NORFOLK	47	30	66	22	38	10	0.05	-0.23	0.05	0.90	45	0.53	41	88	50	0	4	1	0
	NORTH PLATTE	46	27	57	19	37	6	0.02	-0.13	0.02	0.66	51	0.45	56	86	44	0	6	1	0
	OMAHA	51	34	64	25	42	12	0.07	-0.21	-	2.09	83	1.60	106	88	57	0	3	-	-
	SCOTTSBLUFF	45	24	62	19	35	3	0.34	0.19	0.34	1.14	75	0.83	87	79	43	0	7	1	0
	VALENTINE	45	24	63	17	35	7	0.02	-0.13	0.02	0.22	21	0.19	28	90	56	0	7	1	0
NV	ELY	33	12	42	2	23	-9	1.02	0.84	0.69	2.34	110	2.11	152	88	60	0	7	3	1
	LAS VEGAS	58	43	82	36	49	-4	0.71	0.60	0.71	3.17	244	3.10	333	67	35	0	0	1	1
	RENO	44	24	54	12	34	-6	0.41	0.19	0.41	4.30	141	3.72	178	86	46	0	7	1	0
	WINNEMUCCA	41	26	47	18	33	-5	0.14	-0.03	0.07	3.52	156	3.27	239	92	53	0	7	4	0
NH	CONCORD	44	29	53	21	37	12	1.01	0.36	0.76	8.08	98	6.13	121	81	54	0	4	2	1
NJ	NEWARK	51	38	60	35	45	9	1.39	0.59	0.77	13.88	140	9.72	151	78	50	0	0	3	2
NM	ALBUQUERQUE	50	27	68	17	39	-4	0.00	-0.11	0.00	1.78	125	0.78	84	66	22	0	5	0	0
NY	ALBANY	44	30	54	26	37	10	0.65	0.04	0.40	7.29	96	5.81	125	90	58	0	7	4	0
	BINGHAMTON	40	28	45	23	34	9	3.18	2.57	2.27	10.90	141	8.09	171	95	63	0	6	4	2
	BUFFALO	44	31	56	26	38	11	0.56	-0.03	0.35	10.83	124	7.86	157	91	59	0	7	3	0
	ROCHESTER	44	29	50	24	37	10	1.14	0.60	0.66	10.83	157	7.95	190	92	61	0	6	2	1
	SYRACUSE	41	28	44	20	35	8	1.80	1.23	1.08	12.07	157	7.95	177	92	59	0	5	4	2
NC	ASHEVILLE	59	37	68	27	48	6	0.95	-0.12	0.46	19.31	181	16.33	228	86	41	0	1	4	0
	CHARLOTTE	65	45	75	39	55	10	0.87	-0.15	0.47	13.61	123	9.54	126	82	37	0	0	3	0
	GREENSBORO	59	40	67	30	50	7	0.71	-0.16	0.54	12.89	131	10.72	165	77	43	0	1	2	1
	HATTERAS	54	45	58	40	50	2	1.71	0.72	1.02	23.11	166	17.46	186	91	66	0	0	3	2
	RALEIGH	62	40	71	30	51	6	0.64	-0.30	0.46	16.04	154	13.28	185	83	43	0	1	4	0
	WILMINGTON	65	43	71	36	54	5	1.82	0.88	0.66	23.37	209	18.53	245	86	53	0	0	3	3
ND	BISMARCK	38	24	54	18	31	11	1.18	1.06	0.46	1.88	135	1.80	198	93	70	0	8	5	0
	DICKINSON	37	22	54	15	29	6	2.08	1.98	0.85	2.59	240	2.56	361	91	65	0	7	5	2
	FARGO	42	33	47	27	37	21	0.77	0.64	0.57	2.85	160	2.41	210	92	73	0	4	3	1
	GRAND FORKS	41	31	47	25	36	22	0.64	0.50	0.46	2.00	109	1.44	121	97	79	0	4	4	0
	JAMESTOWN	38	30	46	19	34	16	0.76	0.63	0.28	2.20	140	1.92	179	95	79	0	4	5	0
	WILLISTON	36	21	54	15	28	8	1.56	1.44	0.69	2.08	133	2.06	210	92	64	0	7	5	1
OH	AKRON-CANTON	48	32	60	25	40	10	0.57	-0.07	0.47	8.13	111	6.06	138	90	61	0	4	3	0
	CINCINNATI	58	33	68	26	45	10	0.03	-0.76	0.02	9.01	107	6.24	119	89	47	0	4	2	0
	CLEVELAND	48	34	61	29	41	11	0.17	-0.44	0.11	8.11	111	5.69	135	94	62	0	3	2	0
	COLUMBUS	52	37	66	29	45	12	0.18	-0.45	0.08	6.94	95	4.81	109	84	54	0	1	3	0
	DAYTON	54	36	61	29	45	12	0.18	-0.46	0.08	7.30	101	5.15	120	87	49	0	2	4	0
	MANSFIELD	49	33	66	25	41	11	0.44	-0.16	0.41	7.65	108	5.33	133	89	58	0	2	2	0

Based on 1961-90 normals

Weather Data for the Week Ending February 28, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	49	32	60	26	41	12	0.24	-0.26	0.12	8.86	108	6.79	196	92	58	0	4	3	0
	YOUNGSTOWN	47	34	55	30	40	12	0.27	-0.31	0.24	9.39	132	6.89	160	93	64	0	2	2	0
OK	OKLAHOMA CITY	62	39	75	31	50	6	0.00	-0.48	0.00	6.22	152	4.21	157	75	34	0	1	0	0
	TULSA	60	41	69	33	50	7	0.00	-0.61	0.00	8.08	143	3.78	108	81	44	0	0	0	0
OR	ASTORIA	50	35	52	30	43	-2	2.06	0.28	1.10	35.02	124	25.57	151	97	82	0	2	6	1
	BURNS	36	14	39	7	25	-7	0.42	0.21	0.30	6.04	208	5.22	298	94	62	0	7	4	0
	EUGENE	51	35	55	29	43	-3	0.78	-0.54	0.26	16.45	74	14.22	105	87	59	0	2	4	0
	MEDFORD	49	37	57	32	43	-1	0.53	0.09	0.18	9.46	119	8.11	176	93	58	0	1	5	0
	PENDLETON	49	31	54	26	40	-2	0.10	-0.18	0.08	4.85	114	3.80	143	83	48	0	4	3	0
	PORTLAND	50	36	55	31	43	-2	0.84	-0.05	0.59	15.06	98	12.03	131	95	59	0	2	4	1
	SALEM	50	35	54	29	42	-2	1.32	0.26	0.75	18.39	107	15.22	148	95	61	0	3	5	1
PA	ALLENTOWN	51	36	64	31	44	12	1.45	0.70	0.95	9.63	100	7.26	119	82	50	0	1	3	1
	ERIE	43	33	54	29	38	10	0.12	-0.51	0.10	11.50	142	6.65	148	96	72	0	2	3	0
	MIDDLETOWN	51	37	64	32	44	10	1.68	0.91	1.04	11.55	128	9.54	165	85	51	0	1	3	2
	PHILADELPHIA	53	39	62	35	46	10	2.70	1.98	2.40	12.05	128	8.96	149	84	50	0	0	3	1
	PITTSBURGH	48	34	58	28	41	9	0.65	-0.01	0.41	7.50	98	6.21	126	94	65	0	3	4	0
	SCRANTON	46	32	57	26	39	9	1.34	0.78	1.11	6.80	110	5.89	139	89	48	0	6	3	1
	WILLIAMSPORT	50	34	58	27	42	11	2.18	1.45	1.00	11.43	137	9.97	188	88	48	0	3	3	3
RI	PROVIDENCE	50	34	57	30	42	10	2.49	1.57	1.81	15.91	134	13.07	175	87	58	0	3	4	2
SC	BEAUFORT	68	48	75	42	58	4	1.73	0.87	1.14	19.63	193	15.89	224	95	53	0	0	3	2
	CHARLESTON	69	48	79	42	59	6	1.86	0.96	1.21	22.92	232	17.73	264	93	47	0	0	4	1
	COLUMBIA	67	42	78	34	55	5	1.46	0.39	0.81	17.56	145	13.17	154	95	44	0	0	4	1
	GREENVILLE	64	43	73	36	53	7	2.02	0.82	0.98	18.35	145	14.10	166	78	37	0	0	4	2
SD	ABERDEEN	42	29	51	21	35	14	0.31	0.14	0.13	1.58	127	1.40	167	93	75	0	5	4	0
	HURON	45	29	59	22	37	14	0.03	-0.21	0.03	0.97	63	0.75	70	87	59	0	5	1	0
	RAPID CITY	42	24	59	20	33	4	0.78	0.62	0.74	1.39	101	1.31	147	83	52	0	7	3	1
	SIOUX FALLS	44	30	58	21	37	13	0.12	-0.10	0.09	1.41	78	1.17	102	93	60	0	4	3	0
TN	BRISTOL	60	36	73	27	48	8	0.29	-0.60	0.20	9.48	94	7.31	110	89	40	0	3	5	0
	CHATTANOOGA	69	40	73	33	52	7	1.49	0.19	0.74	15.49	104	12.19	126	95	43	0	0	3	2
	KNOXVILLE	62	40	74	31	51	8	0.38	-0.71	0.21	9.51	74	7.14	87	87	41	0	2	4	0
	MEMPHIS	69	46	71	43	55	8	0.98	-0.24	0.85	16.79	121	12.27	152	87	40	0	0	2	1
	NASHVILLE	64	41	72	33	52	9	0.74	-0.30	0.32	9.95	83	7.76	105	88	31	0	0	5	0
TX	ABILENE	67	40	86	32	54	3	0.00	-0.30	0.00	5.02	158	1.86	86	77	29	0	2	0	0
	AMARILLO	57	30	75	20	43	2	0.00	-0.18	0.00	4.86	319	2.73	246	81	26	0	4	0	0
	AUSTIN	72	49	81	41	60	5	0.93	0.39	0.88	10.20	177	5.94	153	80	34	0	0	2	1
	BEAUMONT	68	49	72	42	58	2	2.07	1.30	1.23	20.50	159	13.88	170	96	61	0	0	2	2
	BROWNSVILLE	80	55	87	50	68	3	0.01	-0.18	0.01	2.54	66	2.09	90	96	42	0	0	1	0
	CORPUS CHRISTI	75	53	81	45	64	3	0.15	-0.27	0.08	3.98	81	3.78	103	96	48	0	0	4	0
	DEL RIO	79	46	89	39	62	4	0.12	-0.10	0.08	1.06	49	0.47	31	75	20	0	0	2	0
	EL PASO	61	38	80	22	50	-1	0.00	-0.10	0.00	1.61	114	0.20	24	50	22	0	1	0	0
	FORT WORTH	66	45	77	39	56	5	1.25	0.66	1.15	15.26	260	8.33	207	87	44	0	0	4	1
	GALVESTON	66	55	72	49	61	4	0.77	0.27	–	15.35	170	10.46	189	97	65	0	0	-	-
	HOUSTON	70	47	77	40	59	3	1.52	0.80	1.52	15.36	158	9.93	159	96	45	0	0	1	1
	LUBBOCK	60	33	76	24	47	1	0.07	-0.12	0.07	3.82	226	1.87	176	77	24	0	3	1	0
	MIDLAND	67	38	81	29	52	2	0.00	-0.17	0.00	2.09	131	0.74	73	64	17	0	1	0	0
	SAN ANGELO	68	38	82	32	53	2	0.03	-0.23	0.03	3.22	122	1.83	98	83	23	0	1	1	0
	SAN ANTONIO	73	45	81	38	59	3	0.92	0.49	0.83	10.20	203	6.65	188	84	35	0	0	3	1
	VICTORIA	72	50	78	43	61	3	0.70	0.25	0.67	6.65	107	5.02	120	95	46	0	0	3	1
	WACO	67	44	76	39	55	3	0.84	0.29	0.77	19.07	342	9.26	248	94	49	0	0	3	1
	WICHITA FALLS	64	41	81	34	52	5	0.00	-0.43	0.00	8.90	235	4.78	192	79	36	0	0	0	0
UT	SALT LAKE CITY	39	23	48	11	31	-6	2.91	2.55	1.20	7.16	189	6.52	276	98	69	0	7	6	2
VT	BURLINGTON	39	28	51	22	34	12	0.81	0.37	0.54	8.65	148	7.00	203	89	64	0	7	2	1
VA	LYNCHBURG	55	36	65	27	45	5	0.83	0.03	0.72	16.45	180	13.73	234	89	48	0	2	5	1
	NORFOLK	61	42	72	36	52	8	1.07	0.20	1.05	15.11	144	12.46	172	86	52	0	0	2	1
	RICHMOND	60	38	72	32	49	7	1.06	0.24	0.92	14.93	154	12.57	196	85	43	0	1	3	1
	ROANOKE	55	40	67	34	47	7	1.15	0.34	0.99	18.44	214	16.07	284	71	41	0	0	5	1
	WASH/DULLES	54	36	62	29	45	8	1.32	0.58	1.02	12.99	149	11.07	201	89	54	0	1	3	1
WA	HANFORD	52	30	55	22	41	–	0.03	-0.11	–	2.70	111	2.39	170	74	40	0	6	-	-
	OLYMPIA	49	31	52	27	40	-2	1.02	-0.29	0.61	22.05	101	15.91	115	99	59	0	4	5	1
	QUILLAYUTE	48	32	50	26	40	-3	2.99	-0.05	1.07	46.65	110	31.14	116	98	66	0	4	6	3
	SEATTLE-TACOMA	48	37	50	32	42	-2	0.61	-0.31	0.41	12.96	86	10.33	110	92	58	0	1	4	0
	SPOKANE	41	26	46	22	33	-2	0.19	-0.17	0.10	4.60	80	3.69	107	93	61	0	7	2	0
	YAKIMA	49	28	52	22	38	-1	0.01	-0.13	0.01	3.99	119	3.80	195	90	48	0	7	1	0
WV	BECKLEY	52	33	65	28	43	8	0.64	-0.13	0.43	12.04	132	9.84	168	93	54	0	5	4	0
	CHARLESTON	54	37	72	29	46	7	0.99	0.18	0.69	8.70	93	7.13	120	92	59	0	2	4	1
	ELKINS	50	31	64	22	41	8	1.04	0.24	0.71	9.39	98	8.85	113	91	58	0	4	3	1
	HUNTINGTON	56	38	69	29	47	8	0.97	0.18	0.61	9.87	109	8.31	145	88	50	0	3	4	1
WI	EAU CLAIRE	45	34	49	30	39	19	1.66	1.44	0.80	4.18	148	3.90	227	98	69	0	3	5	2
	GREEN BAY	48	31	54	26	39	17	0.42	0.10	0.36	3.97	107	3.36	163	93	59	0	5	3	0
	MADISON	50	32	59	27	41	17	0.68	0.34	0.41	5.01	128	3.76	176	91	58	0	5	4	0
	MILWAUKEE	46	31	48	26	38	12	0.82	0.38	0.56	7.02	130	5.72	188	96	67	0	6	4	1
WY	CASPER	37	17	58	4	27	-2	0.37	0.20	0.37	1.53	86	1.06	93	81	46	0	7	1	0
	CHEYENNE	38	22	54	14	30	-1	0.04	-0.10	0.03	1.04	87	0.60	64	77	43	0	7	2	0
	LANDER	34	18	44	7	26	-3	0.23	0.05	0.11	2.48	152	0.63	59	86	40	0	7	3	0
	SHERIDAN	36	23	46	18	29	0	0.08	-0.09	0.07	1.12	53	0.49	35	84	61	0	7	2	0

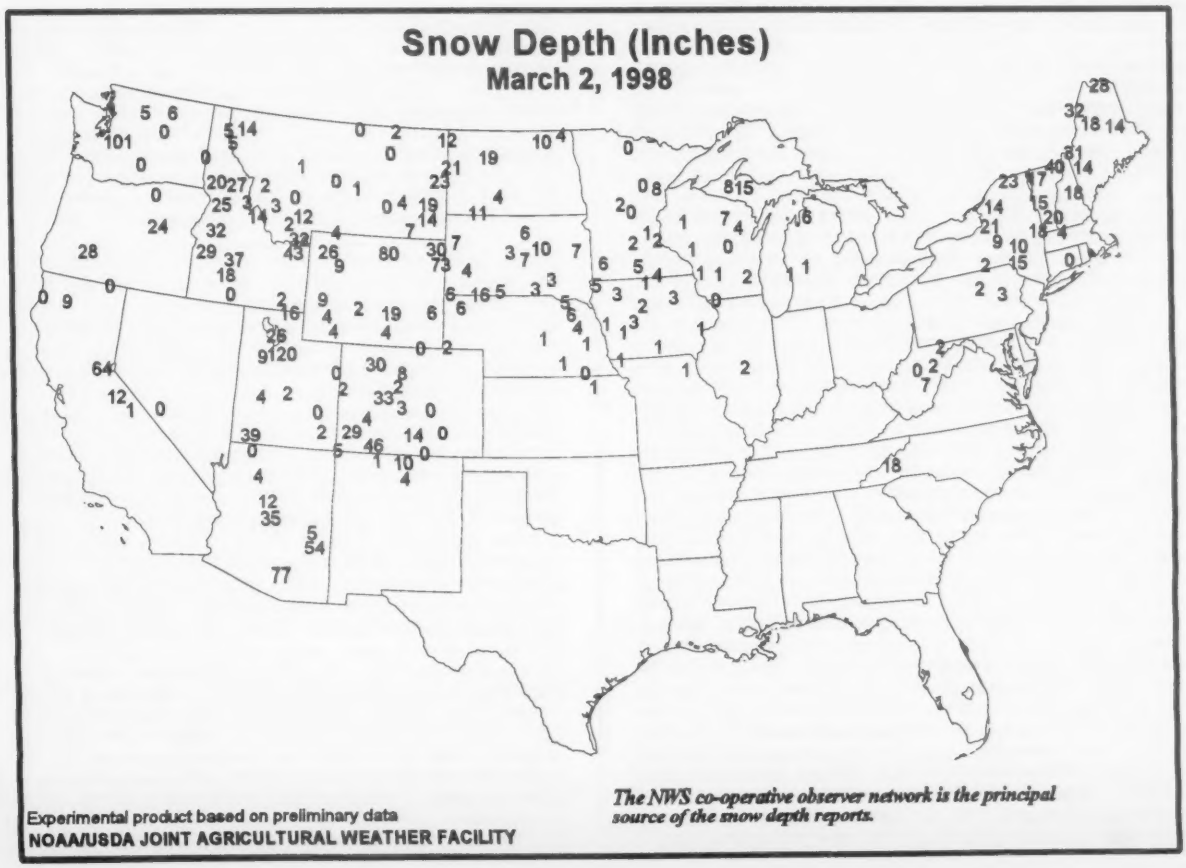
NOTE: These data are preliminary and subject to change. In the past, precipitation totals from a number of stations have been incomplete.

National Agricultural Summary

February 23 - March 1, 1998

HIGHLIGHTS

Most of the Eastern United States, from the Great Plains to the Atlantic Coast, continued to experience above-normal temperatures, especially the northern Corn Belt. A blizzard struck the northern High Plains, bringing a sudden return of winter to an area that had been experiencing very mild weather. Despite the extreme weather change, no damage to the winter wheat crop was reported. There were no early reports of storm-related livestock losses, but heavy snowfall combined with high winds closed roads, isolating many herds from ranchers and making feeding chores difficult. Mild temperatures aided winter wheat development in the southern Plains. In the Coastal Bend region of Texas, some corn and cotton fields were planted on well-drained soils. Early-planted corn fields were emerged with good stands reported. Storms that had been hitting southern California subsided, allowing flooded fields to begin draining, but progress of field activities remained slow due to wet soils. Flood-stressed plants showed signs of recovery. Rice growers began draining fields in preparation for planting, and where conditions permitted, cotton fields were sprayed and prepared for planting. The Gulf and Atlantic Coast States continued to be very wet. Early-week severe storms in northern and central Florida slowed fieldwork and stressed livestock, but no crop damage was reported.


Snow Depth (Inches)
March 2, 1998
Experimental product based on preliminary data
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
The NWS co-operative observer network is the principal source of the snow depth reports.

February State Agricultural Summaries

These summaries, issued weekly through the summer growing season, provide brief descriptions of crop and weather conditions important on a national scale. More detailed data are available in Weather and Crop Bulletins published each Monday by NASS State Statistical Offices in cooperation with the National Weather Service. The crop weather reports are also available on the Internet through the NASS Home Page on the World Wide Web at http://www.usda.gov/nass/ or from JAWF at http://www.usda.gov/oce/waob/jawf.

ALABAMA: Wet weather continued in all areas during February. Wet fields continue to prevent seedbed preparation for early spring planting. Land preparation is at a critical stage for planting corn, peanuts. Chill hours required for peach blooms have been adequately met for all commercial varieties in central areas. Bloom development is running from 5 to 10 days ahead of 1997. Winter wheat 41% fair, 59% good. Other activities included general care of livestock, poultry, catfish.

ARIZONA: Farmers began planting cotton in the Yuma area. At the beginning of February, no cotton had been planted. By the end on the month, 2% had been planted. Virtually all of the planted small grains have emerged. Alfalfa hay harvest was beginning in some areas of the State. At the beginning of the month, most of the harvest was green chop. By the end of the month, the harvest cycle was well under way. Harvest activity was reported as 16% light, 17% moderate. Sheeping off held steady over the month. Widespread rains and snow have improved the pasture conditions throughout most of the State. This did not affect livestock. At the beginning of the month, range, pasture 6% poor, 73% fair, 20% good, 1% excellent. At the end of the month, that had improved to 9% poor, 30% fair, 56% good, 5% excellent.

ARKANSAS: Weather reports indicated temperatures and precipitation were above normal for March 1998. Temperatures have ranged from 1 to 4 degrees F above normal for most reporting stations during the month. Precipitation amounts from 1/2 to 2 inches above normal. Extension personnel report this weather was favorable to winter wheat growth during the month. First fertilizations have been completed. Crop about two weeks ahead of normal. Concern exist for late season temperatures below 28 degrees. No reports of adverse conditions to livestock were reported.

CALIFORNIA: El Niño continued to batter State throughout the short month of February. Wet, wet weather contrasted sharply with the warm, dry memories of February 1997. Precipitation records were broken in many areas. Progress of field activities was at a virtual standstill in most areas, due to continued heavy rains, high winds, and wet soils. Low-lying fields of wheat, barley, oats and alfalfa remained in standing water from the San Joaquin Valley northward. Plants were yellowing, growth was becoming severely stunted in some fields. Mid-month's sustained winds caused lodging problems in wheat fields in the southern San Joaquin Valley. Small grain, alfalfa fields received aerial applications of fertilizer, herbicides where conditions permitted. Cotton fields were sprayed with preplant herbicides between storms. Imperial Valley's wheat, sugar beets were progressing rapidly as month's end neared, weather conditions improved. At times throughout February, seed alfalfa, sugar beet growers in Fresno County resorted to pumping water out of flooded fields. Wet weather continued to hamper State growers conducting cultural activities in orchards and vineyards. Pollination of almond trees was hindered by the wet, windy weather. Citrus growers fell behind schedule in picking this month. Wind damage, crease, puff were problems in citrus crops, with some fruit blown to the ground. By the end of the month, the weather began to clear up and the desert area Valencia orange harvest was underway. It was a difficult month for State vegetable growers. Moisture levels were substantially higher than normal, to the detriment of many crops. Asparagus was harvested in the desert valleys, Kern County. Broccoli, cauliflower were harvested in the Imperial, Coachella Valleys, where conditions permitted in Stanislaus County. Broccoli harvest in Fresno County was delayed by rainfall, wet soils. Lettuce harvest continued in the desert valleys. Spring lettuce was weeded, thinned, sprayed to control mildew in the San Joaquin Valley. Celery harvest continued in Monterey, Riverside counties. Tomato planting was postponed; processing schedules may be affected. Tulare County spinach fields showed signs of stunting, yellowing attributable to extended rainfall, lack of sunshine. Carrot harvest was ongoing in the San Joaquin Valley. Cabbage was harvested in the Imperial, San Joaquin Valleys. Winter potato harvest continued in Riverside County. Sweet potato fields were still being fumigated. Spring potatoes, carrots were planted in Kern County. Other crops harvested were peas, lima beans, green beans, onions, radishes, vineseed. Pasture, rangeland was in generally good to excellent condition across the State. Forage growth was slowed in many areas because of low temperatures, rain-saturated soil, lack of sunshine. Some low-lying pastures were flooded with runoff from heavy rains. Runoff from higher elevations caused erosion damage to foothill pastures. Sheep, range cattle were doing well, gaining weight on lush grasses in drier foothill pastures. Cold, muddy conditions in dairy pens were worsened by the heavy rains, resulting in stress on dairy animals, reductions in milk production. Beekeepers continued moving hives into plum, almond orchards as the trees came into bloom, weather conditions slowed bee activity. Skies began to clear in the last week, February 1998 ended on a warm, sunny day.

COLORADO: February was generally mild with only brief periods of low temperatures. Mountains received additional snowfall, portions of the far eastern plains received snow and/or rain early in the month. Following mild temperatures in January, some of the wheat was beginning to green up. Conditions remain mostly dry along the Front Range, where some early fieldwork was started in preparation for planting onions, spring grain crops. Calving, lambing are active under generally favorable weather conditions, other major activities include attending producer meetings, assembling tax records, filling out the Census of Agriculture questionnaire.

DELAWARE: Warmer-than-normal temperatures continued for the month of February. Warm weather could be good for early growth of small grains. However, large amounts of rain might cause damage to small grains due to standing water. In Sussex County, respiratory problems with poultry seem to be improving with warmer weather. Activities: No field activity being reported due to large amounts of precipitation.

FLORIDA: Temperatures were mostly normal during February. Topsoil remained mostly adequate to surplus throughout the State. Frequent rains followed by short periods of sun were predominate throughout the month. Sugarcane harvest, other fieldwork were delayed by the rains. Sugarcane growth was normal. Tobacco farmers maintained tobacco beds. Pasture conditions were reported poor to fair in many areas due to flood. Vegetable, strawberry harvests were active when possible throughout the month, interrupted many times by rainfall. Most of State's citrus groves had intermittent rain, harvest was active throughout the month.

GEORGIA: Soil moisture adequate to mostly surplus statewide. Temperatures averaged above normal. Rain, wet soils continue to hamper all field activities. Some open weather late in the month allowed limited field operations. Land preparations still behind schedule, very little progress northern half, southern areas 10 to 20% complete. Limited cotton harvest during month, progress ranges 92 to 100% complete, overall about 97 to 98% picked. Soybeans deteriorating, harvest around 97% finished. Wheat, rye,

other small grains fair to good, some poor to very poor. Water-logged soils lacking oxygen, preventing adequate small grain growth. Nitrogen applications also behind schedule, 50 to 60% complete. Corn planting underway extreme South, continued wet conditions could reduce acreage. Peaches fair to mostly good, 75 to 80% blooming south, about 50% central, 25% north. Tobacco plants mostly good to excellent, some in southeast poor to fair. Plants ahead of land preparation could be rather large at transplanting time. Pastures muddy, conditions poor to fair. Cattle, hogs fair to good. Main activities: limited field preparations, mowing cotton stalks, small grain fertilizer applications, taking care of livestock.

HAWAII: Days suitable for fieldwork 7.0. Weather conditions were generally favorable for agriculture. Moderate showers Sunday (2/22) helped replenish reservoirs. Water conservation efforts remain in effect. Mostly sunny; occasional showers in windward areas, high elevations. Light winds, higher daytime temperatures aided crop growth. Irrigated crops made good progress. Non-irrigated crops in fair condition. Banana orchards benefited from added rainfall. Harvesting will be steady. Papaya also benefited from showers, more rain is needed. Harvesting steady from Hawaii, Kauai, Oahu. Head cabbage crop condition is good. Harvesting heavy with good quality. Tomato harvesting active, supplies heavy, peak harvesting in some areas. Ginger root harvesting steady, young plantings benefited from arrival of rain.

IDAHO: Mild weather has aided calving, lambing. Soil cultivation has started in some areas of the State. Isolated reports of sugar beet, small grain plantings were also received. Calving is 6% complete, lambing 15%. Hay, roughage supply 9% surplus, 66% adequate, 23% short, 2% very short. Winter wheat condition 8% excellent, 81% good, 11% fair. Activities: Repairing machinery, calving, lambing, feeding livestock, farm planning, working on taxes.

ILLINOIS: The continued El Niño weather brought above-normal temperatures, precipitation throughout the State during February. Snow cover was lacking, because of the warm weather, winter wheat fields were greening up. If wheat continues to grow, it could reach the stage where it is vulnerable to freeze injury. As of February 27, the winter wheat 28% excellent, 57% good, 12% fair, 2% poor, 1% very poor. Wet conditions made it difficult to apply nitrogen or spread manure. As of February 27, topsoil 19% surplus, 76% adequate, 5% short. Livestock producers contended with muddy lots, cattle dealt with respiratory stress.

INDIANA: Weather conditions were very mild during February, as temperatures averaged about 10 degrees F above normal across the State. Precipitation was below average for the month, was received primarily in the form of rain. Winter wheat is greening up, looks very good, although some farmers are concerned that the warm weather are bringing it out of dormancy too early. Nitrogen is being applied to the crop as soil conditions allow. Some tillage work has been completed in isolated areas. However, most areas remain too wet to support heavy machinery. Warm weather has provided excellent conditions for calving, lambing. Major activities: Applying nitrogen to wheat, marketing grain, livestock, attending farm shows, meetings, hauling manure, repairing machinery, buildings, preparing taxes, calving, lambing.

IOWA: Unseasonably warm weather continued through the month, with precipitation falling as rain rather than snow. Average depth of snow cover 0 inches, 1997 3 inches; average depth of frost penetration 2 inches, 1997 18 inches. Soil erosion rated greater than in January at 78% light to none, 21% moderate, 1% severe. Warm weather, rains softened rural roads, limiting grain, livestock deliveries. Grain movement 9% none, 47% light, 40% moderate, 4% heavy. Availability of hay, roughage for livestock feed, 11% short, 84% adequate, 5% surplus. Quality of hay, roughage poor 9%, fair 54%, good 37%. Utilization of stubble fields for grazing 20% none, 27% light, 38% moderate, 15% extensive. Lack of frost left cattle feedlots, pastures, fields muddy all across the State. Mud was a concern as calving got underway, some scours, aborting was reported. Cattle, calf losses 22% below average, 74% average, 4% above average. Hog condition ok, some reports of PRRS, pneumonia, TGE. Hog, pig losses 20% below average, 78% average, 2% above average.

KANSAS: Winter wheat experienced mild conditions during February, is breaking dormancy in mostly good to excellent condition across the State, according to Agricultural Statistics, Kansas State University Extension Service. Over-all winter wheat 19% excellent, 58% good, 21% fair, 2% poor. Conditions at the beginning of February had been rated 17% excellent, 64% good, 17% fair, 2% poor. Crop appears to have suffered little damage during the winter from freeze, wind damage. Army cutworm in the north-central, winter grain mites in the central, south-central have been reported. Wet field conditions continue to be the norm as farmers were top-dressing wheat and pastures where possible. Some fields of wheat were underwater in the central part of the State. Topsoil moisture 24% surplus, 75% adequate, 1% short. Calving is well underway, as is lambing. Muddy conditions throughout the State continue to be a problem for livestock producers. Grazing of field stubble and wheat pastures continues. Some cattle are being moved to pastures.

KENTUCKY: Mild temperatures, frequent rain showers prevailed through much of February. An early-month snowfall covered the eastern three-fourths of the State with 18 to 24 inches. The storm left many areas without electricity, limited transportation of tobacco, grains, livestock to market for several days. Some barns, tobacco warehouses collapsed under the weight of the heavy snow. Soil moisture continued to be rated adequate to mostly surplus across the State. Rains kept fields muddy, maintained high-water levels in stock ponds, streams. Winter wheat was showing some early growth mainly from above-normal temperatures experienced during the month. Burley tobacco markets will remain open into April in hopes that late-curing crops will be dried sufficiently for sale. State gross sales totaled 477.1 million pounds, and averaged $189.60 per hundred pound at the end of February. Pasture conditions were generally poor, producers continued to feed hay, extra grain. Cattle were in mostly fair to good condition despite muddy conditions.

LOUISIANA: Days suitable for fieldwork for the month were 8.0. Soil moisture throughout the State was in surplus for each week due to above-normal precipitation for the month. Temperatures were also slightly above normal. Most fieldwork was hindered by wet conditions. However, machinery work was active throughout the month. Corn: Growers applied burndown herbicides in preparation for planting. Sugarcane: Cane fields were drained, some weed control measures were used by ground, air. Equipment repair was active. Wheat: Fertilization, some top dressing of wheat occurred during the month. Vegetables: Some vegetables were harvested regardless of wet conditions, some early planting occurred, most was hampered by rain. Livestock: Cattle were being fed hay, some grazed ryegrass pastures. Spring calving was getting into full swing. Pasture fertilization was active. Crawfish: Crawfish catches were lighter than normal but prices were higher. Rice: Water leveling was active in all areas.

MARYLAND: Warmer-than-normal temperatures being reported for the month of February. Large amounts of precipitation are causing problems with fertilizer, manure spreading on small grains. Hay supplies are reported as very limited as many livestock operators are heading to Pennsylvania to purchase hay. Pasture was reported as being in bad condition on the upper eastern shore. Activities: Almost non-existent as standing water in fields halts any activities.

MICHIGAN: Mild weather prevailed during February. Mean temperatures across the state have averaged 5 to 8 degrees above normal since the beginning of December. These temperatures should put the winter of 1997-98 in the record books as one of the mildest of the century. Farmers were concerned about the lack of frost, its impact on the winter wheat crop. Farming activities included preparing machinery, hauling corn, grain to market, spreading manure, pruning trees. Muddy conditions hampered fieldwork, some farmers harvested corn, plowed during February.

Livestock enjoyed the mild temperatures, were in good condition. Calves have faired well, early lambing was almost complete. Hay prices were higher than normal, feed supplies were adequate.

MINNESOTA: February average temperatures were generally record warm across the State. By the end of the month, most of the State had no snow cover, snow depths over 2 inches were confined to the extreme northeastern tip of the State. Precipitation, mainly in the form of rain, occurred primarily during the last week of the month. Fluctuations in temperature, with no snow cover, have some potential for damage to hayfields. Livestock are in good condition, having benefited from the lack of normal winter stresses. Gains have been excellent in feedlots, livestock production costs have been moderate as grain, forage have been in adequate supply, energy expenditures are way down from their high level during the severe winter a year ago.

MISSISSIPPI: Main farming activities for the month of February were equipment maintenance, feeding, tending livestock. Wet conditions delayed some farmers from fertilizing, preparing fields, planting corn. However, because of the mild temperatures, ryegrass grew exceptionally well, in some areas, wet conditions did not allow farmers to graze cattle. Hay supply was mostly short to adequate across the State. Cattle were in mostly good condition. Wheat was in mostly fair to good condition. Both rainfall, temperatures were still above normal.

MISSOURI: Topsoil 2% short, 57% adequate, 41% surplus. Winter wheat 8% poor, 28% fair, 50% good, 14% excellent. Supply of hay, other roughage 6% short, 68% adequate, 26% surplus. Condition of livestock 1% poor, 10% fair, 74% good, 15% excellent. Stock water supplies 2% short, 80% adequate, 18% surplus. Extremely wet weather characterized the month of February. Most areas too wet to spread fertilizer or do other early fieldwork. Precipitation for the month averaged 3.00 inches, compared with the 30-year avg. of 1.90 inches.

MONTANA: Winter wheat 2% very poor, 15% poor, 54% fair, 28% good, 1% excellent. Winter wheat is hard to judge with much of it being covered with snow, ice. Winter wheat wind damage 2% heavy, 15% moderate, 64% light, 19% none. Snow fall during the last week of February increased the protectiveness of snow cover. Some areas received 12 to 18 inches of snow. Winter wheat protectiveness of snow cover 12% very poor, 67% poor, 7% fair, 12% good, 2% excellent. Livestock reported in good to excellent condition. The mild winter has left feed supplies in good shape. No shortage of hay is reported. There are reports of limited grazing in counties because of lack of grass growth last summer. Calving is 17% complete and lambing is 11% complete. Supplemental feeding continues with 96% of cattle and calves receiving supplemental feeding, and 93% of sheep and lambs. Livestock grazing 29% closed, 14% difficult, 57% open.

NEBRASKA: Above-normal temperatures during most of February provided continued open conditions for livestock grazing but left wheat unprotected. Winter wheat 3% poor, 35% fair, 48% good, 14% excellent. Feed grain supplies 2% short, 88% adequate, 10% surplus. Hay, forage supplies 11% short, 84% adequate, 5% surplus. Calving 18% complete. Activities during January: tax and ag. census paper work, attending meetings, delivering grain to elevators, livestock care, equipment repair.

NEVADA: Frequent storms throughout February built mountain snow packs well in excess of normal. Potential for spring flooding, particularly in the Carson, Walker River watersheds, once again present. Surface irrigation to commence soon Smith, Mason Valleys. Fields were being prepared for planting in the extreme south. Grazing of hay fields continued. Calving gaining momentum. Sheep shearing getting underway. Farm flock lambing underway; range flock lambing to begin soon. Main farm, ranch activities: Ditch cleanup, livestock feeding, calving, equipment maintenance, attending meetings, preparing taxes.

NEW ENGLAND: Above-average temperatures, precipitation in southern areas. Above-average temperatures, normal precipitation in northern areas. Damage assessment continues from last month's ice storms. Maple producers starting to tap maple trees. Major farm activities: Clearing debris, fixing fences; caring for livestock.

NEW JERSEY: Temperatures, precipitation continue to average above normal. Most of the precipitation fell in the form of rain. The greatest 24-hour snowfall reported was 2.0 inches at Charlotteburg on the 4th to 5th. Farmers were active maintaining equipment, caring for livestock, preparing, organizing records for tax, census purposes. Some farmers participated in seminars concerning business management, the usage of pesticides. Some nursery operations were digging, shipping plant material. Spraying of alfalfa to combat weeds, field preparation for planting peas occurring in southern areas.

NEW MEXICO: After weeks of dry weather, the first half of February was dominated by light precipitation across the State. During the last part of the month, a series of storm systems swept over the State. However, rain and snow amounts remained light. Average temperatures for the State remained within 2 to 3 degrees of normal throughout February. Ranchers continued to haul water to livestock, while supplemental feeding continued to take place in most counties. Fruit producers were attentively watching weather patterns, late last month, as warmer weather was bringing trees, plants out of dormancy. Farmers were turning under crop stubble, preparing land for spring crops.

NEW YORK: Temperatures averaged well above normal, making outside activities easier. Fruit growers not concerned about warm weather during February. If it continues into March, trees could sustain frost damage as buds would be pushing. In northern areas, producers continued cleaning up from the ice storm that hit in January. Varying amounts of damage to alfalfa fields is evident due to ice. Fields with sufficient snow cover escaped damage. Maple producers prepared tubing in anticipation of an early sap flow. Severe damage to some sugar bushes in northern areas will prevent trees from being tapped. Many meetings, farm shows were held during the month.

NORTH CAROLINA: Month was filled with rain in the Peidmont, coastal regions, snow in the mountains. However, there were several days of spring weather. Shop work, other indoor activities predominated, there were several days of nice weather for fieldwork. Soil moisture 22% adequate, 78% surplus. Activities for the week included: Indoor shop work; preparing tobacco beds; tending livestock; repairing equipment.

NORTH DAKOTA: An extended snowstorm with high winds the last half week of February ended a month of above-normal temperatures. Heavy snow, some areas in excess of 20 inches, fell in the western and north-central districts of the State. Livestock were reported in generally good condition, while calving, lambing were just beginning. Warm weather during the month, the snow, rain made yards, roads muddy, slowing grain movement producing stress on livestock. State average snow depth is 8.9 in., down substantially from 14.6 inches last year. Snow cover at present time is sufficient to protect 74% of the alfalfa. Cattle condition: 1% poor, 21% fair, 72% good, 6% excellent; sheep: 1% poor, 16% fair, 77% good, 6% excellent. All livestock were receiving supplemental feed. Hay, forage supplies were 5% short, 92% adequate, 3% surplus. Cattle sales: 6% below normal, 91% normal, 3% above normal.

OHIO: Precipitation, temperatures were above average. There is no snow cover. A few reporters mentioned thunder storms toward the end of February. Winter wheat is greening up. A few growers were top dressing winter wheat in dryer areas. Slight water damage was being reported as the standing water subsides. One reporter said there was slight heaving in the winter wheat, alfalfa ground. Local tobacco markets closed for the season, but a reporter mentioned there would be a clean up sale in March. There is still some wet tobacco hanging in barns. Some pastures were reported short due to cattle grazing. Fruit growers are concerned about the

buds swelling early on their peach trees. Livestock are having more illness than normal for this time of year due to warm humid weather. One reporter mentioned that a few cattle were in muddy lots causing some stress. Activities: Grain hauling; spreading manure; some field tillage; fencing; equipment repair, maintenance; attending insurance, recertification, conservation meeting.

OKLAHOMA: Dry weather, high winds produced fire danger. Wheat 50% grazed, 48% 1997, 39% avg. Feeder cattle prices down $3 to $4 per cwt. from preceding week. Top-dressing continued. Demand moderate for feeder cattle.

OREGON: Activities: Temperatures mild for this time of year compared to average. Winter pruning winding down. Winter grains look good. Nurseries digging, container movement continued. Some fruit budding underway in the Willamette Valley. Eastern cattle mostly in winter quarters, supplemental feed. Western pastures greening up, supplemental feeding continued.

PENNSYLVANIA: Unseasonably warm weather, above-normal precipitation continued to create some difficulty in hauling manure as the ground thawed. There was some concern for the effects that the warm weather would have on pests, weeds in the coming summer. Activities: Hauling manure; fixing fences; caring for livestock; buying seed, other supplies; attending farm, organization meetings.

SOUTH CAROLINA: February temperatures were above normal as a few days saw highs in the 60's to low 70's. Precipitation was well above average as some locations throughout the State had possible record rainfall. Regular, heavy rainfall caused some flooding. Small grains were in fair to good condition, although wet fields could delay normal fertilizer applications. Pastures, livestock were in fair to good condition. Farmers continued to do maintenance activities as they prepared for upcoming planting activities.

SOUTH DAKOTA: The month of February continued the mild weather patterns of January with less snow, higher temperatures than normal. Most producers are taking advantage of the mild conditions to prepare machinery, supplies for spring seeding. Statewide, the average snow depth was 2 inches. Winter wheat, rye crops are in fair to excellent condition. However, with very little to no snow cover there are many areas of the State where fall seeded crops are coming out of dormancy, posing a risk to winterkill if colder weather prevail. The general opinion is that winter crops are not damaged yet, since temperatures for the month of February, January were unusually mild. As of the end of February, 71% of the alfalfa was under poor snow cover, 26% under adequate cover, 3% under excellent cover. Seventy-one percent of the winter wheat crop was under poor snow cover, 29% under adequate cover. Sixty-four percent of the winter rye crop was under poor snow cover, 16% under adequate cover, 20% under excellent cover. Livestock are in good to excellent condition, with the weather milder than usual. Calving season has just started, lambing season is well under way. During February, calf deaths were 24% below average, 75% normal, 1% above normal. Lamb deaths 21% below average, 78% normal, 1% above normal. With the mild weather, producers have been able to capitalize on open grazing conditions, allowing them to use less of their feed stocks. Grain, concentrates supplies 6% short, 79% adequate, 15% surplus, while hay, roughage supplies 1% short, 81% adequate, 18% surplus. Stock water supplies 1% short, 92% adequate, 7% surplus.

TENNESSEE: Normal rainfall, above-normal temperatures characterized the weather during February throughout most of the State. The only exception being the Cumberland Plateau, which received 6 to 12 inches of snow on February 6th, 7th. Wheat continues to be rated in mostly good to excellent condition. Top dressing was in progress and wheat had begun to joint, ahead of schedule. Cattle were in mostly good condition. Hay supplies were generally adequate.

TEXAS: February proved to be a wet month in most areas with El Niño-driven storms combining with Gulf moisture. Land preparations, planting activity experienced numerous delays in Central areas, along the Upper Coast. Small grain conditions improved during the month in most areas beginning the month at 70% of normal, ending the month at 74%. Livestock conditions remained good for the month, with steady markets, prices reported. Persistent wet conditions caused feeding problems in many areas. Cattle were being moved off wheat for grain during the last part of February.

UTAH: Major farm, ranch activities during the month of February included feeding farm animals, spreading fertilizer, repairing and servicing equipment, calving, soil sampling, planning for the upcoming crop season. Wet weather had increased calf loss and made manure management in feedlots difficult. However, range as well as livestock conditions remained good.

VIRGINIA: Wet, muddy field conditions prevailed again this month. Precipitation during the month of February reached record levels in many localities. Most fields remained completely saturated, causing slight flooding. Fields in some western, southwestern localities were covered with snow for most of the month. Unseasonably warm weather aided in melting the remaining snow cover, creating muddy conditions in these areas as well. Small grains were mostly in fair to good condition. However, 18% of the crop was in poor condition due to excessive rainfall. Some producers are concerned with standing water in small grain fields. Some portions of grain fields have been underwater for 7 to 10 days. Small grains are beginning to show nitrogen stress as top dressing continues to be delayed. Some small grain producers are expecting a 10-percent yield reduction due to nitrogen deficiency. Warm weather has been pushing the development of fruit trees. Some peach trees are prematurely budding, causing concern for potential frost damage at this critical stage. Livestock were in mostly good condition for the month of February. A mild winter for some localities has helped stretch hay supplies. Hay supplies for other localities are limited as producers search for other sources. Muddy pastures continue to make feeding very difficult for most livestock producers. Farming activities included orchard pruning, dormant oil spray on fruit, tending to livestock, tax preparation, attending producer meetings.

WASHINGTON: Topsoil 6% short, 74% adequate, 20% surplus; subsoil 13% short, 85% adequate, 2% surplus. Hay and other roughage supplies, 93% adequate, 7% surplus. Mild winter weather conditions continued. West of the Cascade Mountain range, winter wheat was beginning to grow. Strawberry, blueberry plants were showing signs of buds. Garlic emerged. Pastures were green, growing. Field activity was very slow. Eastern areas reported good moisture conditions, with most areas normal to slightly above for the year to date. Snow cover has melted throughout most of the State. Winter wheat looked good for the most part, with some cheat grass, barley yellow dwarf problems reported. Some producers are reseeding to spring wheat or barley. Spring wheat, pea planting was underway. Some early fertilizer application was reported. Pruning, trellising, removal operations were progressing well ahead of schedule. Warm winter conditions were bringing fruit trees out of dormancy earlier than normal. Some concerns were expressed for the possibility of a late freeze. Grazing conditions were better than normal, hay supplies were holding very well due to the mild winter. Herds were reported to be in excellent condition. Spring calving was well underway. Muddy conditions were reported in some confinement operations.

WEST VIRGINIA: Activities for the month of March: Muddy conditions continue to be a problem in most areas as farmers tried to do fieldwork, feed livestock. Wet field conditions limited plowing for tobacco bud seedings, spreading manure. Mild weather has helped improve wheat conditions, been good for feed grain supplies.

(Continued on back cover)

International Weather and Crop Summary

February 22 - 28, 1998

HIGHLIGHTS

FSU-WESTERN: Unusually mild weather kept winter grain areas in the west and south snow-free and caused a further loss of cold hardiness.

EUROPE: Continued unusually mild weather prompted early greening of winter grains in the east.

NORTHWESTERN AFRICA: Wet weather eased persistent dryness in Algeria and Tunisia, improving conditions for winter grains in the jointing stage.

AUSTRALIA: Dryness and warmth benefited maturing cotton and sorghum.

SOUTH AFRICA: Drier, warmer weather across the corn belt favored development of immature summer crops.

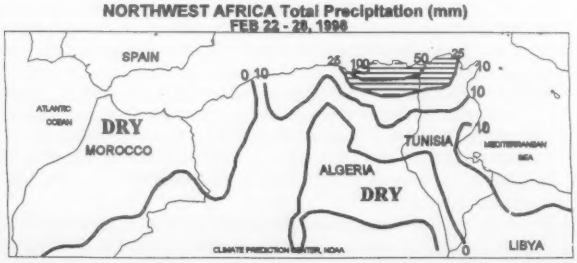
SOUTHEAST ASIA: In Java, widespread showers continued to benefit main-season rice and eased long-term moisture deficits. Drought continued across the eastern Philippines and eastern Malaysia.

EASTERN ASIA: Warm weather prompted winter wheat to begin breaking dormancy across the North China Plain.

SOUTH AMERICA: In southern Brazil, excessive showers caused local flooding and increased disease potential for filling to maturing soybeans.

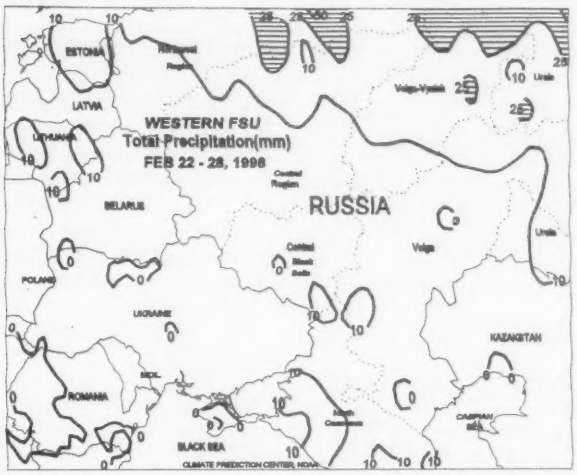
EUROPE

The third consecutive week of unusually mild weather continued over Europe. Weekly temperatures averaged 1 to 5 degrees C above normal in the west and 4 to 8 degrees C above normal in the east. Extreme maximum temperatures ranged from 10 to 15 degrees C in northern Europe and 15 to 20 degrees C in the south. The continued mild weather pattern has likely prompted greening in winter grains in most of eastern Europe, leaving crops vulnerable to potential damage in the event of a cold snap. Winter grains in western and southern areas were rapidly developing. Light, intermittent showers (10-25 mm) fell in England, France, southern Germany, and Italy, benefiting winter grains. Elsewhere, dry weather in Spain, Portugal, and most of eastern Europe favored early spring fieldwork.



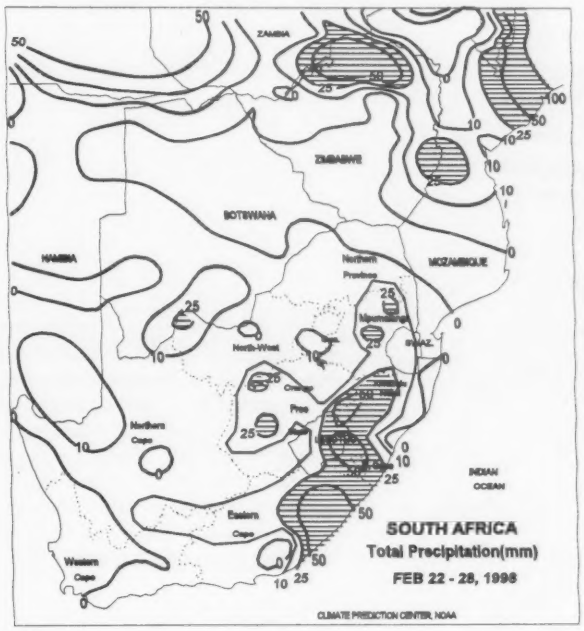
NORTHWESTERN AFRICA

Rain (10-50 mm, with local amounts in excess of 50 mm) fell in Tunisia and the eastern half of Algeria, improving moisture conditions for winter grains previously stressed by persistent dryness. Farther west, however, the third consecutive week of dryness prevailed over crop areas in Morocco and western Algeria. The dryness in these areas has lowered soil moisture reserves, and rain is needed soon to prevent a deterioration in crop conditions. Weekly temperatures averaged near normal in Morocco and 1 to 3 degrees C below normal in Tunisia.



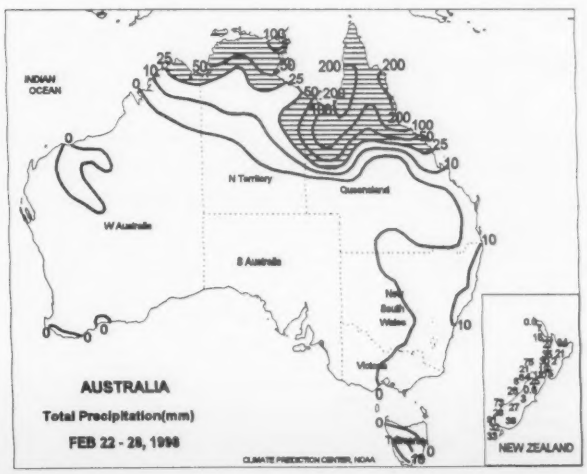
FSU-WESTERN

Unseasonably mild weather prevailed over most of the region, causing further melting of protective snow cover. Winter grain areas in Ukraine, the Baltics, Belarus, and the North Caucasus region in Russia remained snow-free. Furthermore, the mild weather in these areas caused a further loss of cold hardiness in winter grains, leaving them highly vulnerable to potential extreme cold. Weekly temperatures averaged 4 to 8 degrees C above normal in most areas. Extreme maximum temperatures exceeded 10 degrees C in Belarus, Ukraine, and the southern portion of the North Caucasus region in Russia. Light, if any, precipitation (less than 10 mm) prevailed over Belarus, Ukraine, and southern Russia. The combination of unusually mild and mostly dry weather in southern Ukraine and the North Caucasus region in Russia favored early-season fieldwork, including early-spring fertilizer applications.



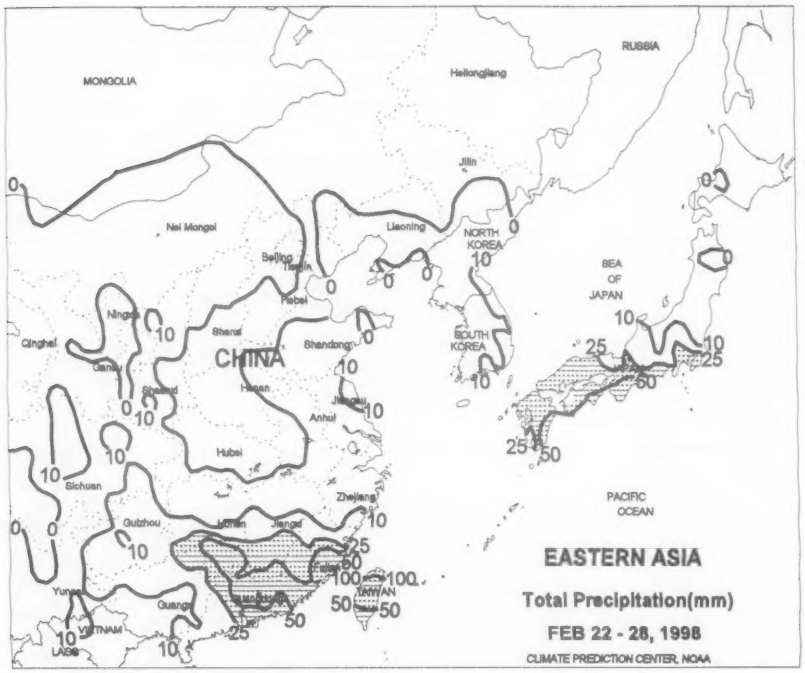
SOUTH AFRICA

Showers tapered off across the corn belt, with most locations receiving less than 10 mm. The exception was a section of the east centered over the border between Free State and Kwazulu-Natal, where rainfall ranged from 25 to 97 mm. This band of wetness extended southward into Eastern Cape but missed primary sugarcane areas, allowing some recovery from recent excessive rainfall. Temperatures averaged near to above normal, spurring growth of reproductive to filling corn. A continuation of warm weather and sunny skies would greatly improve the chances of corn and sunflowers escaping damage from an autumn (April-May) freeze. In Western Cape, dry weather continued over the main winter wheat areas. Winter plantings in the southwest typically begin during April. Elsewhere in southern Africa, warm, dry weather continued over sections of southern and central Zimbabwe, reducing moisture available to immature corn. Scattered showers (10-25 mm, locally exceeding 50 mm) continued north and east of Harare, as well as most areas in Zambia, Malawi, and northern Mozambique.



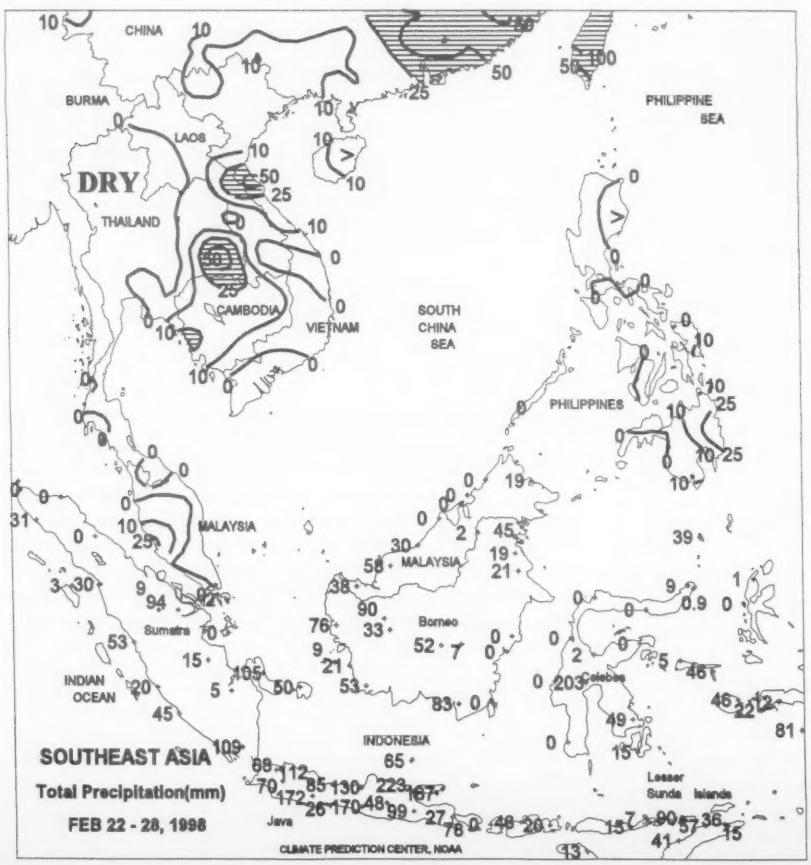
AUSTRALIA

Warm, dry weather covered eastern Australia's primary summer crop region. The weather favored maturation and early harvesting of cotton and sorghum and improved prospects for higher crop quality. The dryness was unfavorable for sugarcane in the main growing areas, but locally heavy tropical rains (100-300 mm or more) returned to northernmost areas in the Cape York Peninsula. In New Zealand, light to moderate rain (3-35 mm) fell in the main agricultural zones.



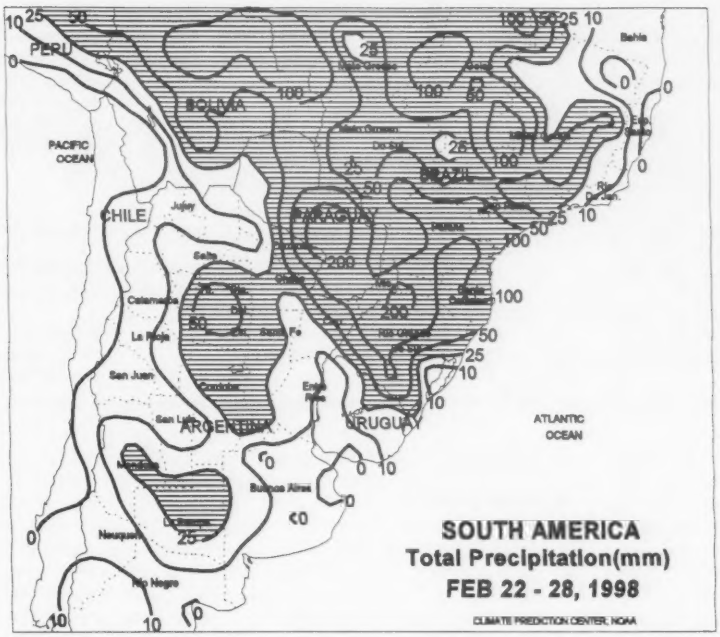
EASTERN ASIA

Warm weather prompted winter wheat to begin breaking dormancy across the North China Plain. Temperatures averaged 2 to 4 degrees C above normal, with highs ranging from 15 to 20 degrees C. Light rain (less than 10 mm) benefited greening wheat across the region. Moderate rain (15-50 mm) provided moisture for early double-crop rice transplanting across southern China.



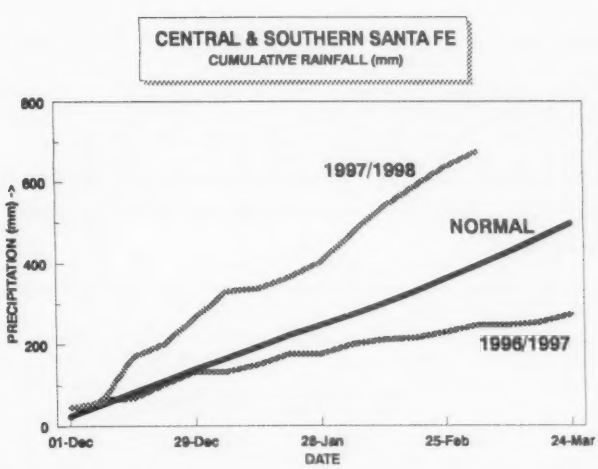
SOUTHEAST ASIA

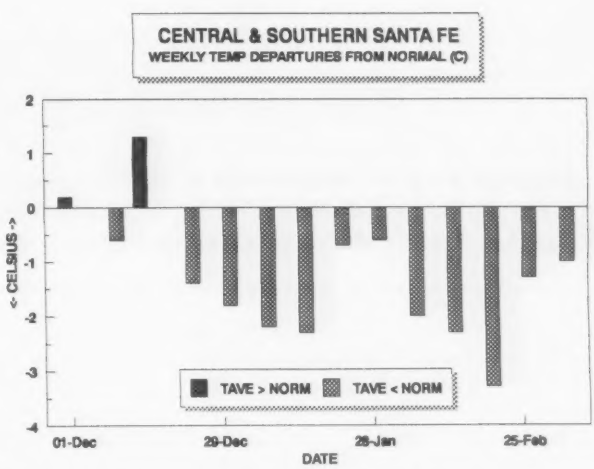
In Java and southern Sumatra, widespread heavy showers (50-170 mm) continued to benefit main-season rice and reduce long-term moisture deficits. Drought stressed second-season crops in the eastern Philippines and oil palm in eastern Malaysia (Sarawak and Sabah). Mostly dry weather prevailed across eastern peninsular Malaysia.



SOUTH AMERICA

In southern Brazil, excessive showers (140-300 mm) in Rio Grande do Sul caused local flooding and increased disease potential for filling to maturing soybeans. Heavy showers (100-200 mm) also caused flooding in southern Paraguay. Elsewhere in southern Brazil, moderate showers (30-100 mm) maintained favorable moisture for filling to maturing soybeans. Drier weather will be needed in the coming weeks across southern Brazil for maturing soybeans. In central Argentina, light to moderate rain (5-30 mm) benefited reproductive to filling soybeans. Late-week dry weather aided maturing corn and sunflower. Temperatures averaged near normal across central Argentina, and 1 to 2 degrees C above normal in southern Brazil.





Wet and cool weather has been the norm for most of Argentina during their summer season. Weekly temperatures in southern and central Santa Fe have been below-normal for 11 consecutive weeks, while rainfall was 171 percent of normal. The wet conditions extend to northern Argentina and southern Brazil, where soil moisture is abundant.

The *Weekly Weather and Crop Bulletin* (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the *Weekly Weather Chronicle*. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53rd Congress, 3rd Session. NOAA is responsible for managing, printing, and distributing the bulletin. The contents may be reprinted freely, with proper credit.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center
Managing Editor ..... ***Douglas Le Comte*** (202) 720-7919
fax (202) 720-1455
Editor ..... ***Brad Rippey*** (202) 720-1444
Meteorologists ..... ***Jeff Savadel and Brian Morris***
Special Requests ..... (202) 720-7917
Subscriptions ..... ***John Kopman*** (301) 763-8227, ext. 7534
fax (301) 763-8125

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(Continued from page 11)

WISCONSIN: As of late February, frost depths averaged 1.5 inches, compared with the 36-year average of 17.6 inches. One year ago, the frost depth was 10.4 inches. The snow depth averaged 0.4 inch, compared with the normal average of 8.3 inches. One year ago, the snow depth was 8.2 inches. Soil moisture conditions were very wet statewide. Mild weather created muddy conditions for livestock. Some farmers started plowing, disking.

WYOMING: Topsoil 17% short, 81% adequate, 2% surplus. Subsoil 31% short, 69% adequate. Average depth of snow cover: 6 inches. Winter wheat 12% fair, 76% good, 12% excellent. Winter wheat wind damage 51% none, 43% light, 6% moderate. Winter wheat freeze damage 88% none, 8% light, 4% moderate. Cattle, sheep in mostly good condition. Hay, roughage supplies 3% short, 85% adequate, 12% surplus. Twenty percent of spring calves have been born. Calf and lamb losses mostly normal. Farm flock ewes lambed 30%, last year 26%, 5-year average 28%. Farm flock sheep shorn 28%, last year 30%, 5-year average 29%.

El Niño Graphics from the Agricultural Outlook Forum

Graphics from the poster exhibit, "El Niño: Truth and Consequences," presented February 23-24, 1998, at the Agricultural Outlook Forum 98 in Washington, D.C., are now available on the Joint Agricultural Weather Facility Web site: www.usda.gov/oce/waob/jawf.

Climate Prediction Center, W/NP52
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Volume 85, No. 10 March 10, 1998

WEEKLY WEATHER AND CROP BULLETIN

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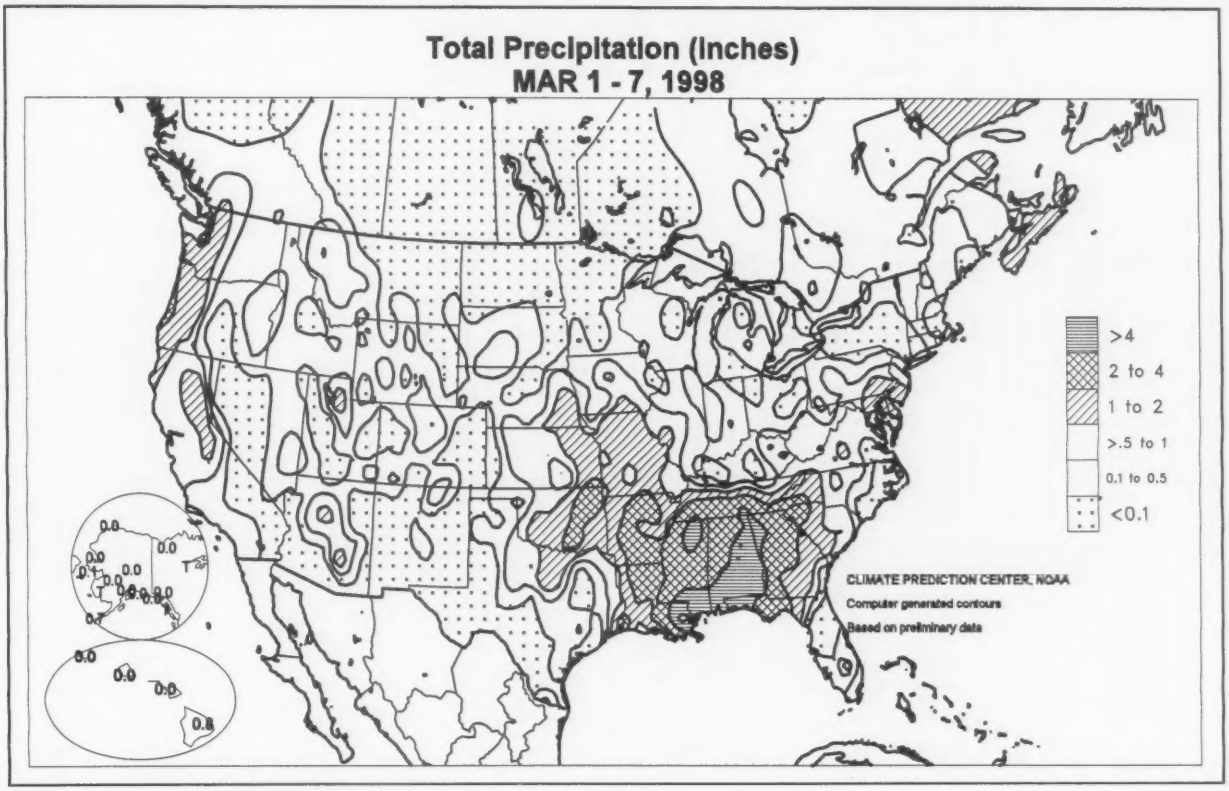

HIGHLIGHTS

March 1 - 7, 1998

Sharply colder air invaded the **Plains** and **upper Midwest**, ending a 6-week run of very mild weather. Weekly temperatures averaged 8 to 16°F below normal in areas of the **northern Plains** affected by the late-February blizzard. For the third consecutive week, cool weather prevailed in **California** and the **Southwest**, where readings averaged as much as 10°F below normal. Cooler conditions also overspread the **South**, including near- to below-freezing temperatures as far south as **central and northeastern Texas** on March 1-3 and **Georgia** on March 4. Warmer weather and rainfall returned to the **Southeast** after midweek, further saturating soils. Farther west, a storm system delivered light

(Continued on back cover)

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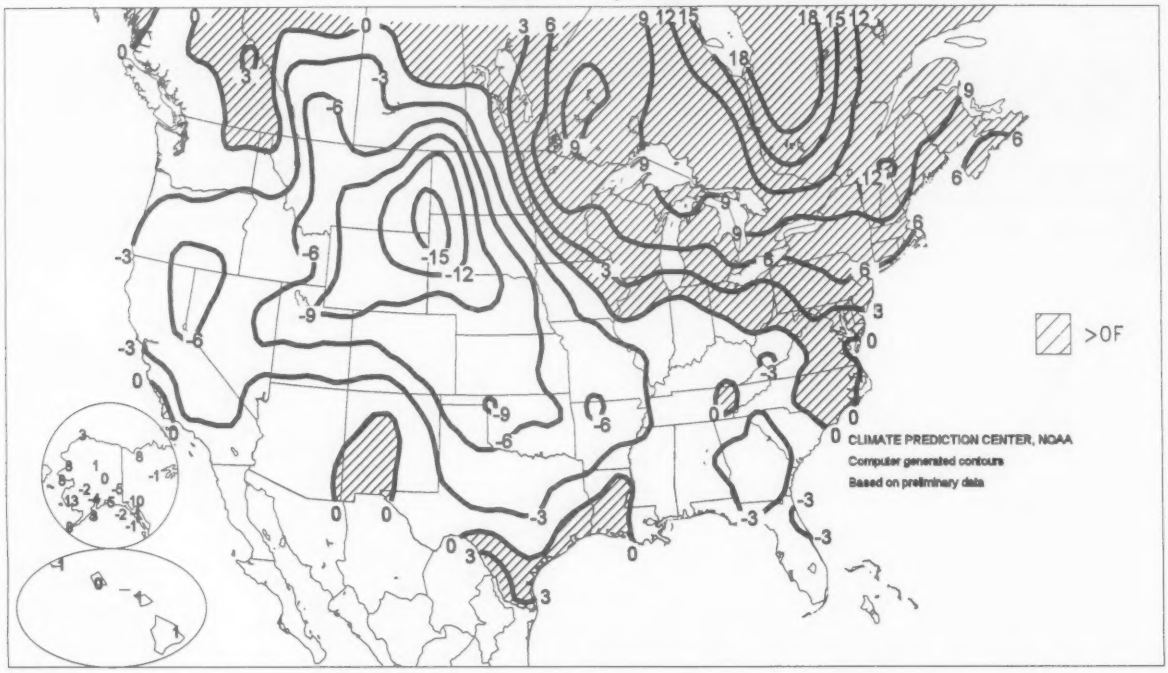
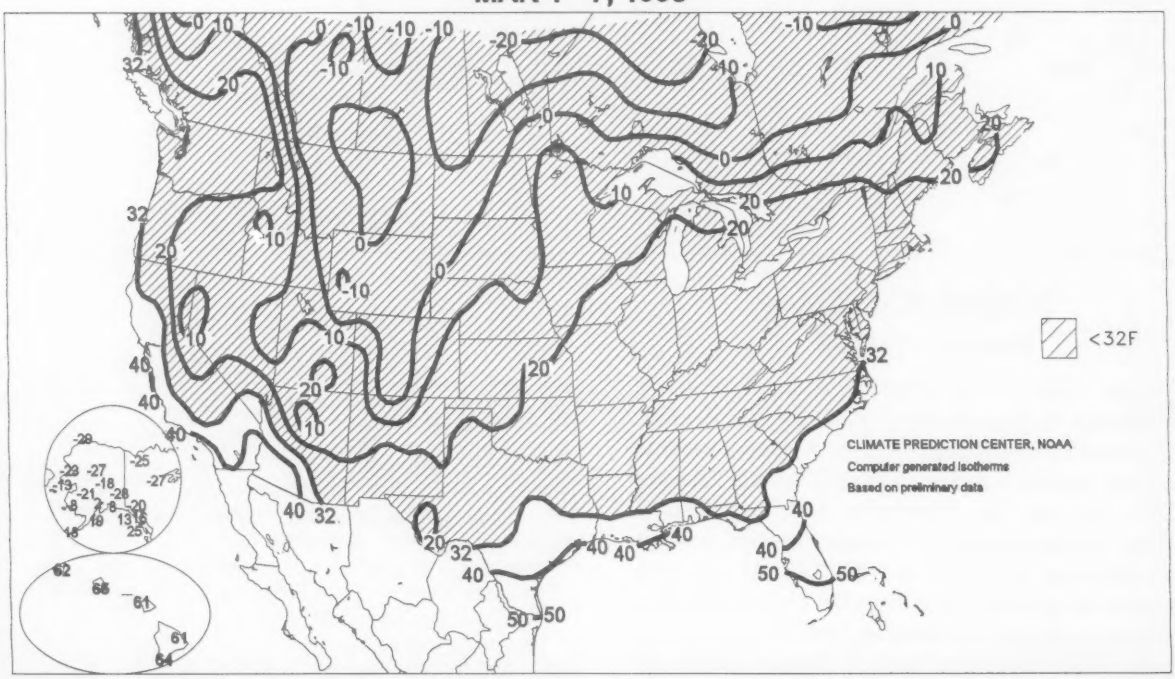
Departure of Average Temperature from Normal (°F)
MAR 1 - 7, 1998



Extreme Minimum Temperature (°F)
MAR 1 - 7, 1998



National Weather Data for Selected Cities

Weather Data for the Week Ending March 7, 1998

Data Provided by Climate Prediction Center (301-763-8000 EXT. 7511) and the Southern Regional Climate Center

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	56	40	80	29	48	-3	3.53	2.22	2.65	3.57	261	20.15	180	95	59	0	3	4	1
	HUNTSVILLE	53	40	82	31	47	-2	1.46	0.00	0.46	1.45	100	18.03	140	92	60	0	2	5	0
	MOBILE	65	46	75	33	56	-2	8.09	6.61	6.19	8.09	547	29.29	250	86	51	0	0	3	3
	MONTGOMERY	62	44	88	30	53	-2	1.30	-0.14	0.71	1.30	90	15.20	131	86	49	0	1	3	2
AK	ANCHORAGE	29	8	36	2	18	-4	0.00	-0.17	0.00	0.00	0	0.63	37	86	53	0	7	0	0
	BARROW	-8	-21	-1	-29	-15	3	0.00	-0.03	0.00	0.00	0	0.00	0	77	71	0	7	0	0
	FAIRBANKS	18	-11	25	-18	4	0	0.00	-0.08	0.00	0.00	0	0.08	8	84	51	0	7	0	0
	JUNEAU	38	20	41	16	29	-1	–	–	–	–	–	–	–	89	39	0	7	-	-
	KODIAK	39	31	42	19	35	3	–	–	–	–	–	–	–	81	61	0	4	-	-
	NOME	21	8	27	-13	14	8	0.13	0.02	0.10	0.13	118	1.35	89	78	60	0	7	3	0
AZ	FLAGSTAFF	43	16	49	-1	29	-4	0.69	0.10	0.67	0.69	117	4.12	87	90	46	0	7	2	1
	PHOENIX	70	48	74	41	59	-1	0.01	-0.21	0.01	0.01	5	3.29	210	62	24	0	0	1	0
	PRESCOTT	53	29	59	25	41	0	0.44	0.00	0.42	0.44	100	3.26	93	80	37	0	6	2	0
	TUCSON	69	43	78	32	56	-1	0.08	-0.09	0.08	0.08	47	3.44	201	67	21	0	1	2	0
	YUMA	74	51	78	47	62	-1	0.00	-0.06	0.00	0.00	0	1.26	203	63	28	0	0	0	0
AR	FORT SMITH	51	36	56	27	43	-4	0.41	-0.41	0.22	0.41	50	11.22	211	92	65	0	3	4	0
	LITTLE ROCK	54	37	61	31	46	-4	1.64	0.59	0.83	1.64	156	11.86	152	86	61	0	3	4	2
CA	BAKERSFIELD	60	40	65	37	50	-6	0.44	0.19	0.36	0.44	178	7.12	328	91	54	0	0	2	0
	EUREKA	53	38	58	31	46	-4	0.52	-0.74	–	0.52	41	27.27	180	99	65	0	1	-	-
	FRESNO	59	41	64	34	50	-4	0.46	0.02	0.28	0.46	105	8.66	207	94	53	0	0	2	0
	LOS ANGELES	63	50	67	48	56	-1	0.35	-0.18	0.22	0.35	66	17.41	321	87	66	0	0	3	0
	REDDING	56	37	61	32	47	-5	0.33	-0.74	0.19	0.33	31	29.76	257	88	41	0	1	3	0
	SACRAM/MCCLELL	59	41	66	34	50	–	0.19	–	0.15	0.19	–	19.37	–	94	50	0	0	2	0
	SAN DIEGO	63	53	67	48	58	-1	0.04	-0.37	0.04	0.04	10	10.37	274	88	56	0	0	1	0
	SAN FRANCISCO	56	45	63	41	51	-2	0.33	-0.41	0.20	0.33	45	22.21	268	89	59	0	0	3	0
CO	ALAMOSA	42	13	51	-2	28	-1	0.06	-0.02	0.06	0.06	75	0.09	14	78	33	0	7	1	0
	CO SPRINGS	42	15	55	8	28	-6	0.00	-0.18	0.00	0.00	0	0.37	43	78	32	0	7	0	0
	DENVER	42	14	54	4	28	-8	0.43	0.20	0.37	0.43	187	0.70	54	75	39	0	7	3	0
	GRAND JUNCTION	46	26	56	16	36	-4	0.24	0.05	0.21	0.24	126	1.19	98	79	36	0	6	2	0
	PUEBLO	47	13	66	4	30	-9	0.02	-0.13	0.02	0.02	13	0.29	38	74	29	0	7	1	0
CT	BRIDGEPORT	46	36	48	33	41	6	0.03	-0.77	0.03	0.03	4	8.65	123	89	69	0	0	1	0
	HARTFORD	48	32	51	27	40	6	0.15	-0.64	0.12	0.15	19	8.64	89	95	59	0	4	3	0
DC	WASHINGTON	51	37	55	32	44	1	0.71	0.00	0.49	0.71	100	11.36	184	83	55	0	1	4	0
DE	WILMINGTON	49	35	56	28	42	4	0.91	0.17	0.73	0.91	123	8.66	129	86	56	0	3	3	1
FL	DAYTONA BEACH	69	48	78	41	59	-3	0.04	-0.67	0.04	0.04	6	11.62	177	95	45	0	0	1	0
	JACKSONVILLE	67	48	73	34	58	-3	0.48	-0.41	0.28	0.48	54	15.08	186	93	47	0	0	2	0
	KEY WEST	75	64	81	54	70	-3	0.70	0.30	0.47	0.70	175	8.00	189	82	63	0	0	2	0
	MIAMI	75	60	81	54	68	-3	0.57	0.05	0.33	0.57	110	8.22	178	89	61	0	0	2	0
	ORLANDO	73	51	83	42	62	-3	0.17	-0.63	0.17	0.17	21	10.90	178	91	42	0	0	1	0
	TAMPA	72	56	81	46	64	-1	0.08	-0.70	0.08	0.08	10	15.54	267	81	49	0	0	1	0
	VALPARAISO/EGLIN	66	48	73	32	57	1	1.26	0.10	0.81	1.26	109	17.11	179	84	50	0	1	4	1
	WEST PALM BEACH	74	57	79	49	65	-3	0.91	0.09	0.79	0.91	111	18.31	291	83	49	0	0	2	1
GA	ATHENS	54	40	64	32	47	-3	1.31	0.08	0.87	1.31	107	14.89	145	88	56	0	1	3	1
	ATLANTA	53	39	61	30	46	-4	2.51	1.20	1.07	2.51	192	15.51	143	90	61	0	2	4	3
	AUGUSTA	56	41	61	28	48	-4	1.67	0.58	1.00	1.67	153	15.54	165	87	48	0	1	3	1
	COLUMBUS	60	43	66	31	52	-2	1.19	-0.12	0.43	1.19	91	8.63	80	84	45	0	1	3	0
	MACON	59	42	68	30	51	-3	1.43	0.30	0.75	1.43	127	13.37	128	89	49	0	1	3	2
	SAVANNAH	62	45	73	33	54	-2	0.77	-0.08	0.32	0.77	91	15.17	198	88	52	0	0	3	0
HI	HILO	82	64	83	61	73	1	0.76	-2.07	0.70	0.76	27	3.20	14	90	59	0	0	2	1
	HONOLULU	81	67	82	65	74	0	0.00	-0.51	0.00	0.00	0	0.98	16	83	60	0	0	0	0
	KAHULUI	84	63	86	61	73	1	0.00	-0.63	0.00	0.00	0	0.86	11	88	56	0	0	0	0
	LIHUE	79	64	81	62	71	-1	0.00	-0.89	0.00	0.00	0	3.94	39	90	67	0	0	0	0
ID	BOISE	43	29	49	21	36	-4	0.43	0.15	0.17	0.43	154	4.56	164	90	48	0	6	3	0
	LEWISTON	48	32	47	27	39	-3	1.05	0.83	0.49	1.05	477	3.15	131	87	56	0	5	5	0
	POCATELLO	35	20	42	2	27	-6	0.28	0.01	0.23	0.28	104	3.70	167	86	58	0	7	4	0
IL	CHICAGO/O'HARE	39	30	42	28	34	2	0.14	-0.34	0.07	0.14	29	4.51	133	89	65	0	7	4	0
	MOLINE	38	30	42	28	34	2	0.18	-0.35	0.04	0.18	34	5.88	178	88	67	0	7	5	0
	PEORIA	39	31	44	28	35	1	0.09	-0.44	0.04	0.09	17	5.28	152	88	63	0	6	3	0
	ROCKFORD	37	28	40	26	33	3	0.16	-0.27	0.12	0.16	37	4.09	143	87	65	0	7	4	0
	SPRINGFIELD	40	30	48	27	35	-1	0.12	-0.50	0.06	0.12	19	5.25	134	88	63	0	6	4	0
IN	EVANSVILLE	47	34	55	30	40	-1	0.21	-0.79	0.18	0.21	21	5.16	76	88	54	0	4	3	0
	FORT WAYNE	40	29	47	24	34	2	0.14	-0.43	0.07	0.14	25	5.54	127	94	64	0	7	3	0
	INDIANAPOLIS	41	29	49	25	35	-1	0.29	-0.49	0.16	0.29	37	4.03	73	89	64	0	6	4	0
	SOUTH BEND	39	29	48	27	34	1	0.11	-0.48	0.04	0.11	19	5.60	119	90	60	0	7	6	0
IA	BURLINGTON	40	33	46	31	37	3	0.08	-0.44	0.06	0.08	16	5.46	188	82	58	0	4	2	0
	CEDAR RAPIDS	35	26	41	22	31	1	0.14	-0.26	0.04	0.14	35	3.45	142	91	72	0	7	4	0
	DES MOINES	34	25	37	21	30	-2	0.10	-0.31	0.04	0.10	24	2.66	107	92	69	0	7	4	0
	DUBUQUE	35	27	38	24	31	3	0.25	-0.28	0.19	0.25	47	4.23	136	88	70	0	7	5	0
	SIOUX CITY	30	20	34	12	25	-5	0.17	-0.19	0.12	0.17	47	1.45	90	91	73	0	7	2	0
	WATERLOO	35	24	39	17	29	1	0.17	-0.24	0.06	0.17	41	2.82	124	92	69	0	7	5	0
KS	CONCORDIA	38	23	45	20	31	-6	0.19	-0.23	0.19	0.19	45	2.56	147	86	55	0	7	1	0
	DODGE CITY	43	22	58	19	32	-6	0.24	-0.04	0.24	0.24	86	1.33	96	84	49	0	7	1	0
	GOODLAND	39	18	56	16	29	-7	0.06	-0.17	0.05	0.06	26	0.81	82	80	46	0	7	2	0
	TOPEKA	42	27	49	21	34	-5	0.69	0.24	0.69	0.69	153	2.25	92	83	52	0	6	1	1

Based on 1961-90 normals

Weather Data for the Week Ending March 7, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	44	26	54	21	35	-6	0.06	-0.42	0.06	0.06	11	1.40	63	81	53	0	7	1	0
KY	JACKSON	48	34	59	29	41	-2	0.41	-0.65	0.16	0.41	39	8.60	99	92	57	0	5	6	0
	LEXINGTON	48	32	58	25	40	-1	0.29	-0.65	0.17	0.29	31	6.85	98	89	62	0	5	4	0
	LOUISVILLE	47	34	58	29	41	-1	0.21	-0.81	0.08	0.21	21	8.47	118	90	65	0	3	-	-
	PADUCAH	50	35	59	27	42	-1	0.32	-0.73	0.20	0.32	30	8.13	99	86	57	0	4	4	0
LA	BATON ROUGE	67	47	77	34	57	-1	1.33	0.22	0.91	1.33	120	21.87	189	89	53	0	0	2	1
	LAKE CHARLES	70	49	78	35	59	2	1.76	0.99	1.70	1.76	229	16.90	191	95	54	0	0	3	1
	NEW ORLEANS	67	50	73	40	58	0	3.00	1.80	1.38	3.00	250	26.55	216	81	56	0	0	3	2
	SHREVEPORT	63	42	82	31	53	-2	0.02	-0.81	0.02	0.02	2	13.04	150	82	44	0	3	1	0
ME	CARIBOU	36	24	40	8	29	10	0.43	-0.09	0.35	0.43	83	7.12	147	91	69	0	8	4	0
	PORTLAND	44	30	51	26	37	8	0.02	-0.77	0.02	0.02	3	10.57	138	92	59	0	6	1	0
MD	BALTIMORE	52	32	57	25	42	2	0.87	0.10	0.44	0.87	113	12.93	186	94	52	0	4	4	0
MA	BOSTON	45	36	54	33	41	6	0.06	-0.77	0.04	0.06	7	10.36	129	92	68	0	0	2	0
	WORCESTER	41	31	48	27	36	6	0.13	-0.73	0.06	0.13	15	7.89	99	97	67	0	8	4	0
MI	ALPENA	36	24	47	16	30	7	0.40	-0.02	0.19	0.40	95	4.94	147	95	73	0	7	4	0
	GRAND RAPIDS	38	30	43	25	34	4	0.15	-0.33	0.08	0.15	31	5.78	154	94	72	0	8	5	0
	HOUGHTON LAKE	36	25	48	16	30	7	0.25	-0.15	0.07	0.25	62	3.25	108	96	67	0	7	5	0
	LANSING	38	29	43	24	34	5	0.44	0.00	0.25	0.44	100	5.93	181	92	76	0	7	4	0
	MARQUETTE	30	16	40	4	23	4	1.03	0.47	0.57	1.03	184	4.88	109	95	76	0	7	6	1
	MUSKEGON	38	30	44	25	34	5	0.17	-0.31	0.06	0.17	35	4.52	105	92	64	0	7	3	0
MN	DULUTH	30	17	36	7	24	5	0.18	-0.17	0.06	0.18	51	4.63	195	92	67	0	7	5	0
	INT'L FALLS	31	19	39	13	25	10	0.12	-0.07	0.10	0.12	63	1.82	106	85	64	0	7	3	0
	MINNEAPOLIS	34	23	40	16	28	3	0.19	-0.17	0.09	0.19	53	2.63	120	92	66	0	7	4	0
	ROCHESTER	31	21	35	14	26	2	0.12	-0.18	0.06	0.12	40	2.97	163	93	69	0	7	3	0
	ST. CLOUD	32	23	37	17	28	6	0.30	0.06	0.23	0.30	126	1.87	117	90	69	0	7	4	0
MS	JACKSON	63	43	74	29	53	0	1.50	0.25	1.33	1.50	120	16.54	148	90	50	0	3	3	1
	MERIDIAN	63	42	73	28	52	-1	1.83	0.34	1.63	1.83	123	20.81	172	93	49	0	3	3	1
	TUPELO	56	41	61	30	48	-2	2.94	1.62	0.79	2.94	223	15.12	138	88	60	0	1	4	4
MO	COLUMBIA	40	29	47	26	35	-4	0.69	0.08	0.63	0.69	113	6.41	164	90	63	0	6	4	1
	KANSAS CITY	41	29	47	23	35	-3	0.79	0.32	0.78	0.79	166	2.85	107	83	55	0	6	2	1
	SAINT LOUIS	42	32	50	28	37	-3	0.36	-0.37	0.31	0.36	49	6.18	133	91	60	0	5	5	0
	SPRINGFIELD	42	32	50	26	37	-5	0.30	-0.46	0.14	0.30	39	7.25	154	90	66	0	4	3	0
MT	BILLINGS	30	14	45	7	22	-10	0.42	0.21	0.30	0.42	200	1.22	69	89	59	0	7	5	0
	BUTTE	32	9	48	-10	21	-5	0.47	0.32	0.38	0.47	313	1.76	184	88	60	0	7	2	0
	GLASGOW	25	13	31	7	19	-5	0.08	-0.01	--	0.08	88	0.47	66	86	64	0	7	2	0
	GREAT FALLS	30	10	48	-6	20	-10	0.35	0.14	0.16	0.35	167	1.53	90	90	60	0	7	4	0
	KALISPELL	36	23	50	7	29	-1	0.94	0.71	0.65	0.94	409	2.26	79	82	52	0	7	3	1
	MILES CITY	23	8	27	-1	15	-14	0.14	0.03	0.06	0.14	127	0.77	70	89	74	0	7	4	0
	MISSOULA	37	26	50	12	32	-1	0.43	0.21	0.19	0.43	196	2.20	97	84	56	0	7	3	0
NE	GRAND ISLAND	32	21	37	16	27	-6	0.09	-0.25	0.06	0.09	26	0.96	62	87	68	0	7	2	0
	LINCOLN	33	24	35	18	28	-5	0.23	-0.14	0.13	0.23	62	2.22	137	89	69	0	7	4	0
	NORFOLK	28	19	30	6	23	-8	0.45	0.10	0.17	0.45	129	0.96	59	90	74	0	7	6	0
	NORTH PLATTE	34	17	44	11	25	-7	0.29	0.09	0.29	0.29	145	0.96	95	87	57	0	7	1	0
	OMAHA	32	24	35	18	28	-5	0.93	0.56	--	0.93	251	2.53	135	88	70	0	7	-	-
	SCOTTSBLUFF	36	16	50	3	26	-7	0.59	0.39	0.29	0.59	295	1.43	124	82	45	0	7	3	0
	VALENTINE	23	12	26	6	18	-12	0.32	0.14	0.18	0.32	178	0.50	57	92	76	0	7	4	0
NV	ELY	37	12	46	2	24	-8	0.11	-0.08	0.11	0.11	58	2.22	141	86	50	0	7	1	0
	LAS VEGAS	62	43	68	37	53	-1	0.00	-0.11	0.00	0.00	0	3.08	294	65	27	0	0	0	0
	RENO	45	22	59	4	34	-7	0.52	0.33	0.30	0.52	274	4.20	184	85	36	0	8	2	0
	WINNEMUCCA	43	22	52	14	33	-6	0.15	-0.02	0.07	0.15	88	3.42	222	91	51	0	8	5	0
NH	CONCORD	45	29	52	26	37	9	0.19	-0.41	0.08	0.19	32	6.28	111	91	58	0	6	4	0
NJ	NEWARK	50	39	53	33	45	6	0.06	-0.76	0.06	0.06	7	9.76	134	89	60	0	0	1	0
NM	ALBUQUERQUE	57	32	65	22	44	0	0.11	0.00	0.09	0.11	100	0.91	67	57	22	0	4	2	0
NY	ALBANY	45	30	48	26	37	7	0.19	-0.43	0.08	0.19	31	6.57	125	97	65	0	6	5	0
	BINGHAMTON	39	31	45	27	35	7	0.14	-0.45	0.07	0.14	24	7.73	145	93	66	0	5	3	0
	BUFFALO	39	31	43	25	35	6	0.24	-0.33	0.10	0.24	42	8.13	145	94	72	0	4	4	0
	ROCHESTER	42	32	47	28	37	7	0.22	-0.28	0.09	0.22	44	8.19	175	96	63	0	3	4	0
	SYRACUSE	41	32	48	27	37	7	0.15	-0.41	0.06	0.15	27	8.07	159	92	64	0	5	4	0
NC	ASHEVILLE	48	32	58	26	40	-4	0.23	-0.84	0.18	0.23	21	16.57	202	89	57	0	4	3	0
	CHARLOTTE	57	42	69	32	49	2	0.58	-0.46	0.58	0.58	56	10.14	118	70	41	0	1	1	1
	GREENSBORO	54	35	64	28	45	0	0.16	-0.69	0.12	0.16	19	11.43	156	76	41	0	3	2	0
	HATTERAS	51	44	54	37	48	-1	0.07	-0.92	0.06	0.07	7	17.53	168	87	62	0	0	2	0
	RALEIGH	56	36	67	27	46	-1	0.11	-0.80	0.06	0.11	12	13.39	186	91	46	0	3	2	0
	WILMINGTON	61	43	73	33	52	1	0.08	-0.83	0.06	0.08	9	18.58	219	82	40	0	0	2	0
ND	BISMARCK	22	7	24	-2	15	-8	0.12	0.00	0.08	0.12	100	1.88	184	92	77	0	7	3	0
	DICKINSON	19	5	22	-3	12	-13	0.13	0.04	0.05	0.13	144	2.52	311	90	77	0	7	5	0
	FARGO	27	19	32	10	23	3	0.06	-0.11	0.02	0.06	35	2.36	179	93	77	0	7	3	0
	GRAND FORKS	25	15	31	4	20	2	0.00	-0.17	0.00	0.00	0	1.94	143	95	80	0	7	0	0
	JAMESTOWN	25	14	29	8	19	-2	0.15	0.00	0.07	0.15	100	2.15	176	93	74	0	7	5	0
	WILLISTON	18	-3	20	-9	8	-16	0.20	0.09	0.09	0.20	182	2.31	212	90	75	0	7	4	0
OH	AKRON-CANTON	41	27	49	23	34	0	0.30	-0.40	0.24	0.30	43	6.51	128	95	65	0	6	4	0
	CINCINNATI	44	29	54	25	36	-2	0.36	-0.53	0.31	0.36	40	6.67	108	92	64	0	6	4	0
	CLEVELAND	41	30	50	22	35	2	0.59	-0.02	0.31	0.59	97	6.41	133	98	69	0	6	5	0
	COLUMBUS	45	32	55	29	38	2	0.10	-0.59	0.06	0.10	14	4.87	95	88	52	0	8	2	0
	DAYTON	42	29	52	25	35	-1	0.19	-0.51	0.08	0.19	27	5.81	116	94	62	0	7	4	0
	MANSFIELD	40	30	48	28	35	1	0.28	-0.38	0.25	0.28	42	5.74	123	92	70	0	6	2	0

Based on 1961-90 normals

Weather Data for the Week Ending March 7, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	41	31	46	28	36	4	0.04	-0.49	0.03	0.04	8	6.78	169	91	80	0	5	2	0
	YOUNGSTOWN	41	28	50	24	35	3	0.37	-0.27	0.17	0.37	58	7.10	147	98	70	0	7	4	0
OK	OKLAHOMA CITY	51	33	63	22	42	-5	1.06	0.50	0.94	1.06	189	5.27	163	77	54	0	3	2	1
	TULSA	48	32	55	23	40	-6	1.84	1.15	1.82	1.84	267	5.81	134	83	58	0	3	2	1
OR	ASTORIA	50	38	52	30	43	-2	2.40	0.70	1.33	2.40	141	29.12	151	97	88	0	2	5	1
	BURNS	38	20	42	11	29	-5	0.30	0.09	0.18	0.30	143	5.52	282	94	60	0	7	3	0
	EUGENE	50	34	54	27	42	-4	1.07	-0.25	0.47	1.07	81	15.36	103	98	59	0	2	5	0
	MEDFORD	49	32	61	26	41	-5	0.63	0.19	0.35	0.63	143	8.69	172	94	52	0	5	4	0
	PENDLETON	47	31	60	25	39	-3	0.53	0.26	0.43	0.53	196	4.32	148	91	58	0	5	4	0
	PORTLAND	50	36	54	29	43	-3	1.22	0.37	0.48	1.22	144	13.26	132	98	59	0	2	5	0
	SALEM	51	35	54	26	43	-2	1.11	0.09	0.57	1.11	109	16.34	143	95	58	0	3	4	1
PA	ALLENTOWN	50	33	57	26	42	0	0.14	-0.58	0.12	0.14	19	7.41	108	90	55	0	3	3	0
	ERIE	39	31	45	26	35	4	0.36	-0.26	0.27	0.36	58	7.00	137	98	75	0	3	2	0
	MIDDLETOWN	51	33	59	26	42	5	0.73	-0.04	0.72	0.73	95	10.27	157	90	49	0	2	2	1
	PHILADELPHIA	50	37	58	30	44	5	0.65	-0.08	0.53	0.65	89	8.13	121	91	63	0	1	4	1
	PITTSBURGH	43	31	52	25	37	2	0.21	-0.51	0.12	0.21	29	6.39	113	97	88	0	6	5	0
	SCRANTON	45	32	52	27	38	6	0.13	-0.43	0.12	0.13	23	6.00	125	92	58	0	5	2	0
	WILLIAMSPORT	47	32	54	25	40	6	0.07	-0.63	0.06	0.07	10	10.60	177	91	51	0	3	2	0
RI	PROVIDENCE	47	35	54	32	41	7	0.16	-0.72	0.08	0.16	18	12.55	150	97	68	0	1	4	0
SC	BEAUFORT	60	46	71	33	53	-3	0.35	-0.58	0.22	0.35	36	16.60	210	90	60	0	0	4	0
	CHARLESTON	62	46	75	35	54	-1	0.16	-0.83	0.10	0.16	16	17.90	232	84	45	0	0	3	0
	COLUMBIA	58	42	68	30	50	-2	0.29	-0.82	0.24	0.29	26	13.45	139	88	49	0	1	3	0
	GREENVILLE	54	39	64	28	46	-2	0.46	-0.77	0.41	0.46	37	14.16	145	82	46	0	2	2	0
SD	ABERDEEN	25	13	30	1	19	-5	0.13	-0.09	0.07	0.13	59	1.52	143	92	77	0	7	3	0
	HURON	27	16	30	6	22	-5	0.08	-0.23	0.04	0.08	26	1.03	75	88	71	0	7	2	0
	RAPID CITY	22	8	30	-4	15	-16	0.30	0.13	0.24	0.30	176	0.94	89	92	74	0	7	3	0
	SIOUX FALLS	27	18	32	8	23	-4	0.51	0.23	0.23	0.51	182	1.87	117	90	77	0	7	5	0
TN	BRISTOL	51	36	63	29	43	-1	0.27	-0.57	0.13	0.27	32	7.52	100	96	53	0	2	3	0
	CHATTANOOGA	54	40	61	33	47	0	2.16	0.80	1.89	2.16	159	14.71	133	95	57	0	0	4	1
	KNOXVILLE	54	39	61	30	46	1	0.29	-0.86	0.09	0.29	25	7.62	81	88	52	0	2	5	0
	MEMPHIS	53	39	63	31	46	-3	2.24	1.08	1.25	2.24	193	14.52	157	89	60	0	1	5	1
	NASHVILLE	52	38	58	31	45	-1	0.74	-0.32	0.36	0.74	70	8.53	101	89	60	0	2	5	0
TX	ABILENE	61	37	81	27	49	-4	0.35	0.07	0.35	0.35	125	2.20	89	78	42	0	3	1	0
	AMARILLO	52	25	66	21	38	-5	0.04	-0.18	0.04	0.04	20	2.80	214	74	40	0	6	1	0
	AUSTIN	67	47	81	40	57	-1	0.10	-0.33	0.09	0.10	23	6.04	140	74	48	0	0	2	0
	BEAUMONT	70	51	79	37	60	2	2.60	1.86	2.54	2.60	351	16.46	185	91	60	0	0	2	1
	BROWNSVILLE	76	62	88	50	69	3	0.05	-0.09	0.05	0.05	36	2.14	78	89	57	0	0	1	0
	CORPUS CHRISTI	74	55	83	40	65	2	0.02	-0.24	0.02	0.02	8	3.74	95	91	53	0	0	1	0
	DEL RIO	75	51	85	34	63	3	0.00	-0.12	0.00	0.00	0	0.39	24	71	32	0	0	0	0
	EL PASO	65	40	75	26	53	1	0.04	-0.04	0.02	0.04	50	0.23	25	41	16	0	2	2	0
	FORT WORTH	60	42	77	33	51	-2	0.42	-0.15	0.26	0.42	74	8.70	190	81	53	0	0	2	0
	GALVESTON	67	56	73	48	62	3	0.03	-0.50	0.03	0.03	6	10.53	174	87	63	0	0	1	0
	HOUSTON	71	48	84	33	59	2	0.03	-0.63	0.02	0.03	5	10.23	148	88	47	0	0	2	0
	LUBBOCK	59	29	78	21	44	-4	0.04	-0.15	0.04	0.04	21	1.90	151	78	28	0	5	1	0
	MIDLAND	66	33	82	21	50	-2	0.02	-0.12	0.02	0.02	14	0.78	66	89	18	0	3	1	0
	SAN ANGELO	64	38	80	24	51	-3	0.03	-0.16	0.03	0.03	16	1.26	61	83	34	0	3	1	0
	SAN ANTONIO	69	48	78	35	58	0	0.09	-0.24	0.09	0.09	27	6.70	174	82	52	0	0	1	0
	VICTORIA	70	51	79	37	60	0	0.02	-0.34	0.02	0.02	6	5.02	111	94	53	0	0	1	0
	WACO	62	41	76	31	51	-3	0.02	-0.48	0.02	0.02	4	10.17	241	89	52	0	2	1	0
	WICHITA FALLS	56	35	77	26	45	-4	0.10	-0.33	0.06	0.10	23	4.86	166	82	46	0	3	2	0
UT	SALT LAKE CITY	36	21	41	14	29	-10	1.09	0.71	0.65	1.09	287	7.61	278	90	62	0	7	4	1
VT	BURLINGTON	39	30	44	26	35	9	0.43	-0.02	0.21	0.43	98	7.41	190	93	72	0	6	4	0
VA	LYNCHBURG	51	32	57	26	41	-1	0.66	-0.12	0.52	0.66	86	14.59	219	86	47	0	5	3	1
	NORFOLK	51	40	53	34	45	0	0.13	-0.72	0.12	0.13	15	14.36	178	90	63	0	0	2	0
	RICHMOND	53	37	62	29	45	1	0.30	-0.52	0.24	0.30	37	12.91	179	89	53	0	2	2	0
	ROANOKE	50	35	57	30	43	0	0.06	-0.71	0.06	0.06	8	16.02	250	72	43	0	3	1	0
	WASH/DULLES	52	32	58	23	42	2	0.57	-0.13	0.45	0.57	81	11.81	190	93	57	0	3	4	0
WA	HANFORD	53	32	58	23	42	–	0.13	0.04	0.13	0.13	144	2.52	168	80	39	0	5	1	0
	OLYMPIA	49	31	52	23	40	-3	1.21	0.01	0.74	1.21	101	18.25	122	99	66	0	4	3	1
	QUILLAYUTE	51	30	54	24	41	-2	0.66	-2.13	0.57	0.66	24	31.57	106	97	56	0	5	4	1
	SEATTLE-TACOMA	47	35	51	30	41	-4	1.01	0.15	0.72	1.01	117	11.46	112	94	63	0	3	3	1
	SPOKANE	41	29	46	23	35	-2	0.31	-0.05	0.18	0.31	86	3.96	104	90	60	0	5	4	0
	YAKIMA	48	29	53	22	38	-2	0.13	-0.06	0.12	0.13	68	3.93	184	89	48	0	5	2	0
WV	BECKLEY	42	29	52	24	35	-3	0.39	-0.35	0.11	0.39	53	10.16	154	92	64	0	5	5	0
	CHARLESTON	48	32	61	27	40	-2	0.54	-0.26	0.20	0.54	67	8.20	122	96	60	0	5	4	0
	ELKINS	45	27	61	20	36	1	0.23	-0.58	0.13	0.23	28	7.05	102	95	60	0	6	5	0
	HUNTINGTON	49	34	61	29	42	0	0.38	-0.42	0.26	0.38	48	8.98	138	86	53	0	4	4	0
WI	EAU CLAIRE	34	24	40	17	29	5	0.40	0.12	0.16	0.40	143	4.33	216	94	69	0	7	5	0
	GREEN BAY	36	27	40	24	32	7	0.38	-0.01	0.13	0.38	97	3.38	132	93	69	0	7	6	0
	MADISON	35	28	41	22	32	4	0.39	0.00	0.22	0.39	100	4.07	161	89	64	0	7	5	0
	MILWAUKEE	36	29	39	25	32	3	0.17	-0.32	0.09	0.17	35	5.95	168	91	64	0	7	3	0
WY	CASPER	30	7	42	-6	19	-12	0.04	-0.13	0.03	0.04	24	1.09	84	84	58	0	7	2	0
	CHEYENNE	32	15	46	2	23	-8	0.17	-0.02	0.08	0.17	89	0.54	58	78	39	0	7	4	0
	LANDER	30	11	41	1	20	-10	0.09	-0.10	0.09	0.09	47	0.80	65	85	51	0	7	1	0
	SHERIDAN	29	8	46	-2	19	-12	0.17	0.00	0.10	0.17	100	0.67	43	86	66	0	7	4	0

NOTE: These data are preliminary and subject to change. In the past, precipitation totals from a number of stations have been incomplete.

February Weather and Crop Summary

Weather

A wet-weather spell stretched to 20 weeks in the Southeast, highlighted by an early-month storm that also dumped record snowfall in the Ohio Valley. In California and the Southwest, 4 weeks of nearly continuous storminess resulted in widespread flooding, mudslides, and agricultural disruptions. A late-month pattern shift delivered blizzard conditions to parts of the northern Plains. February precipitation records were set at more than a half-dozen locations in the Southeast and at least 19 stations in California. Monthly rainfall topped 400 percent of normal in central and southern California, southern Nevada, and southern Arizona. Totals less than 50 percent of normal were restricted to a few locations in the Rockies and Plains.

The first week of February featured a major storm traversing the Southeast and a series of storms pounding the West Coast. Both coastlines sustained beach erosion due to heavy surf. The Southeastern storm struck just a week after late-January's damaging "nor'easter." At Hampton Roads, VA, the February 4 tide peaked at 6.97 feet above mean lower low water (mllw), the highest since the Ash Wednesday storm of March 1962. That tide came only 7 days after the water reached 6.44 feet above mllw on January 28, which was comparable to the 6.42 feet observed during the storm of April 26-27, 1978. Farther inland, February 4-6 snowfall totaled 22.4 in Louisville, KY, and 18.5 inches in Cincinnati, OH, single-storm records in both locations. In the central Appalachians, Beckley, WV netted 13.0 inches just a week after a 32.0-inch snowfall. A few days earlier, during the night of February 2-3, the then-developing low-pressure system sparked severe thunderstorms in Peninsular Florida, producing gusts to 104 mph in Miami, 90 mph in Hollywood, and 66 mph in Homestead.

Meanwhile in California, a nearly continuous procession of storms arrived across northern and central areas in late January, persisting until February 24. In northern coastal California, where heavy rain arrived earlier in January, Eureka noted a trace or more of rain on 57 of the year's first 59 days. Some of the worst river flooding affected the San Francisco Bay area on February 3, when the Pajaro River at Chittenden crested about 8 inches above the April 1958 record. On the same day, the Napa River at St. Helena peaked 1.9 feet below the record set in February 1986 and tied in March 1995. The Russian River at Guerneville crested more than 10 feet below the 1986 record, but about 6.6 feet above flood stage. Significant precipitation spread into southern California on several occasions, especially on February 2-3, 6-8, 14-17, and 22-24. The south's most impressive rainfall rates occurred during the last wave of storminess on February 22-23, when Mount Wilson received 10.12 inches during a 24-hour period. For the month, Bakersfield tallied 5.36 inches, 94 percent of their normal annual total. The list of the State's February-record totals follows:

California February-Record Precipitation (Inches)

Location	Total	Former Rec./Year
Ukiah	22.33	19.49 in 1958
Santa Barbara	21.74 *	17.33 in 1962
UCLA	20.51 *	18.37 in 1918
Chatsworth	20.11 *	17.71 in 1962
Oxnard	17.80	15.58 in 1962
Simi Valley	17.20 *	11.15 in 1992
Northridge	15.75 *	14.23 in 1962
Monterey	15.00	11.68 in 1978
San Francisco	14.89	12.52 in 1878
L.A. Civic Center	13.68	13.37 in 1884
L.A. Airport	13.30	11.07 in 1962
Lompoc	12.86	11.54 in 1918
Redwood City	12.46	10.06 in 1986
Santa Maria	11.59	9.69 in 1962
Long Beach	11.22	9.66 in 1937
San Jose	10.23	7.02 in 1915
Riverside	9.49 *	6.97 in 1969
Stockton	8.01	7.34 in 1936
Bakersfield	5.36 *	4.68 in 1978

* Denotes an all-time-record monthly total.

Although the monthly precipitation of 3.20 inches in Tucson, AZ was their second-highest February total (4.15 inches fell in 1905), a trace or more of rain fell on 17 days, breaking the 1905 record by a day. February-record totals were observed, however, in parts of the Southwest, and are listed below with records from the Southeast and the northern Plains:

February-Record Precipitation (Inches)

Location	Total	Former Rec./Year
Wilmington, NC	11.22	8.74 in 1983
Jacksonville, FL	11.12	9.16 in 1920
Tampa, FL	10.82	7.95 in 1963
Charleston, SC	10.17	6.35 in 1983
Norfolk, VA	8.21	7.33 in 1872
Roanoke, VA	8.00	7.17 in 1960
Dulles Airport, VA	5.81	5.75 in 1979
Salt Lake City, UT	4.89	3.22 in 1936
Las Vegas, NV	2.89	2.52 in 1993
Bismarck, ND	1.67	1.65 in 1987

Monthly temperatures ranged from 6 to 16°F above normal across the Nation's northern tier east of the Rockies, resulting in February-record average temperatures at about 20 locations from the Great Lakes region into the Northeast:

Record-Warm February (°F)

Location	Avg. Temp.	Departure	Prev. Rec./Year
Atl. City Marina, NJ	43.0	n/a	42.0 in 1976
Newark, NJ	40.8	+ 7.8	40.8 in 1984
Allentown, PA	38.6	+ 9.3	36.8 in 1954
Cleveland, OH	37.6	+10.5	37.5 in 1930
Mansfield, OH	37.2	+10.2	34.6 in 1976
Williamsport, PA	37.0	+ 9.0	36.1 in 1954
Youngstown, OH	37.0	+11.1	35.5 in 1984
Akron-Canton, OH	37.0	+ 9.7	36.8 in 1890, 1976
South Bend, IN	37.0	+10.6	not available
Rockford, IL	36.6	+13.7	34.7 in 1930
Toledo, OH	36.3	+11.1	not available
Hartford, CT	36.2	+ 8.7	36.2 in 1954
Erie, PA	35.7	+ 9.8	35.5 in 1984
Muskegon, MI	35.0	+10.6	not available
Buffalo, NY	34.1	+ 9.5	33.8 in 1984
Green Bay, WI	31.2	+12.9	not available
Houghton Lake, MI	30.2	+12.0	28.8 in 1954
Alpena, MI	29.7	+11.4	29.0 in 1954
Sault Ste. Marie, MI	29.1	+15.1	24.4 in 1954
Marquette, MI	28.4	+14.4	25.3 in 1984

The warmth resulted in much of the month's precipitation falling as rain in the Great Lakes and Midwestern States. February snowfall was the lowest on record in more than a dozen cities, including Buffalo, NY (1.8 inches), Houghton Lake, MI (1.4 inches), Dubuque, IA (0.2 inches), South Bend, IN (a trace), and Peoria, IL (none). Above-normal monthly temperatures also prevailed across the Northwest (departures of +2 to +5°F) and across the southern half of the Nation east of the Rockies (0 to +7°F). Near- to below-normal readings were restricted to California and the Southwest, where departures ranged from 0 to -4°F.

February 28 marked the 45th consecutive day of above-normal temperatures in Milwaukee. In Illinois, streaks reached 40 days at both Peoria and Springfield. Especially impressive in many areas was the lack of night-time cold. Temperatures remained above 20°F for the entire month in Topeka, KS, the first such occurrence since records began 102 years ago. Medford, OR had but one freeze during the month, breaking their February record of 3 days, set in 1958. The month's lowest temperature in Madison, WI was 11°F, which is equal to their normal February low. February records for consecutive days above freezing were established in Omaha, NE (February 14-23) and Des Moines, IA (February 15-26). Unusually cloudy weather continued in many areas, including those that received little precipitation. For example, 0.31 inches (32 percent of normal) fell in Wichita, KS, but sunshine totaled only 118.25 hours (39 percent of possible), their lowest February amount since 1957. At month's end, the water temperature of Lake Erie at Buffalo stood at 36°F, the highest on record for February 28. The only seasons that the lake remained unfrozen were 1952-53 and 1982-83.

Similar to the early-month scenario, major weather systems battered the Southwest and Southeast again toward month's end. In the West, the storm that produced southern California's downpours on February 22-23 turned northeastward, blanketing Salt Lake City, UT with their fourth-greatest storm-total snowfall (19.4 inches on February 24-25). Later on February 25, blizzard conditions engulfed eastern Montana, eastern Wyoming, western Nebraska, and the western Dakotas. The storm lingered into early March, dropping 103 inches of snow on Lead, SD. Wind gusts, which were clocked as high as 74 mph near Rapid City, SD, drove snow into drifts that reached 10 to 12 feet in some areas. Farther east, a tornado outbreak in central Florida killed 38 people on the night of February 22-23.

Dry weather continued in Hawaii through a fourth consecutive month. Conditions improved slightly toward month's end in Hilo, where more than 2 inches of rain fell during the last 13 days of February. Nevertheless, monthly rainfall was less than 25 percent of normal statewide. The dry weather led to some sharp temperature swings. For example, Kahului reported a daily-record low (53°F) on February 3, but a February-record-tying high (89°F) on February 12.

In Alaska, generally mild, dry weather prevailed. Temperature departures ranged from 0 to +9°F, including the second-warmest February on record in Juneau (37.2°F, 8.8° above normal). A brief mid-month cold snap across the north sent temperatures on the 17th to -62°F in Umiat and -49°F in Prudhoe Bay. February snowfall was the second lowest on record in McGrath (0.5 inches) and third lowest in Juneau (0.5 inches).

Fieldwork

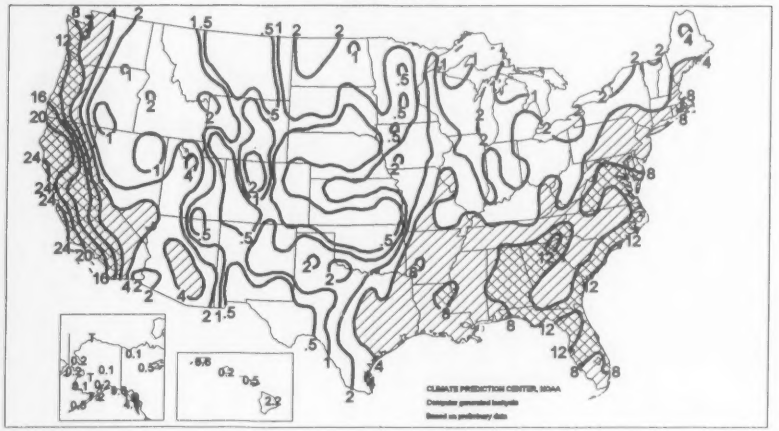
A wet weather pattern that began last October continued in the Gulf and Atlantic Coast States. Field activities in the Southeast were often halted by rainfall and soils too saturated to support equipment. Some cotton and soybean fields remained unharvested in the Southeast and may be abandoned if wet weather continues. In Florida, frequent rains delayed the sugarcane harvest and other fieldwork. Harvesting of vegetable crops, strawberries, and citrus were active throughout the month when weather conditions permitted.

Unseasonably mild temperatures and adequate soil moisture conditions were reported over the major winter wheat-producing States. Snow cover protection was mostly adequate in the northern High Plains, but light or nonexistent elsewhere, leaving much of the crop susceptible to harsh weather. However, little wind and freeze damage has occurred to the wheat crop so far. By the end of the month, the winter wheat crop had begun to break dormancy in Kansas and the eastern Corn Belt States. Farther south, the crop was jointing in Oklahoma and heading in southern Texas.

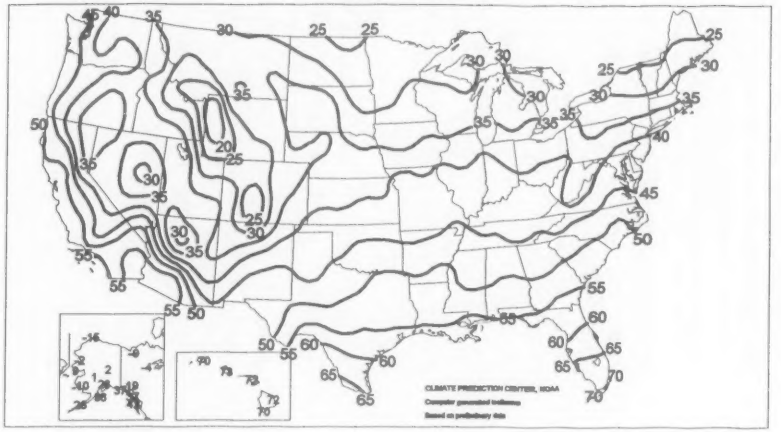
Mild weather in the Corn Belt permitted some tillage and other field preparations in isolated areas, but in most areas, the ground has thawed and is too muddy to support heavy equipment. Lack of frost

(Continued on back cover)

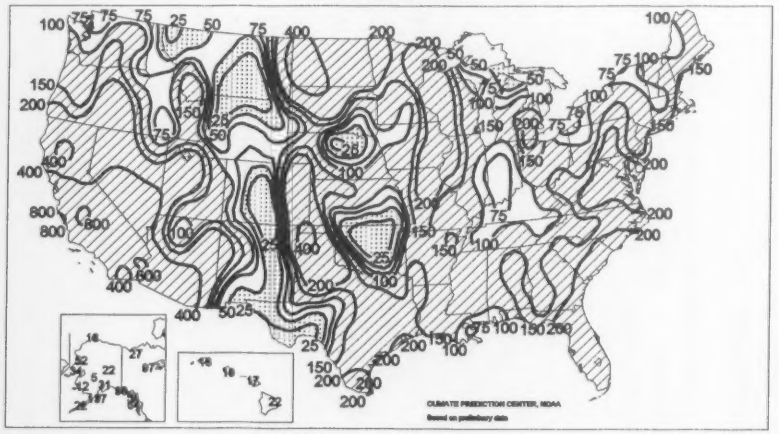
Total Precipitation (Inches)
February 1998



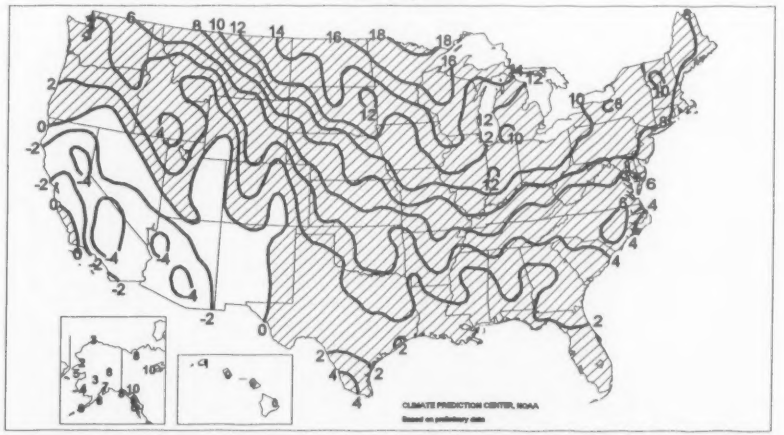
Average Temperature (°F)
February 1998



Percent of Normal Precipitation
February 1998



Departure of Average Temperature from Normal (°F)
February 1998



TEMPERATURE AND PRECIPITATION SUMMARY
February 1998

STATES AND STATIONS	TEMP, °F AVERAGE	TEMP, °F DEPARTURE	PRECIP. TOTAL	PRECIP. DEPARTURE
AL BIRMINGHAM	48	2	8.52	3.80
HUNTSVILLE	46	3	7.03	2.16
MOBILE	54	0	4.28	-1.18
MONTGOMERY	51	2	8.04	2.56
AK ANCHORAGE	26	7	0.24	-0.54
BARROW	-15	3	0.02	-0.09
FAIRBANKS	2	6	0.09	-0.35
JUNEAU	37	9	1.90	-1.85
KODIAK	36	6	7.22	1.94
NOME	9	5	0.20	-0.40
AZ FLAGSTAFF	28	-4	2.14	0.04
PHOENIX	54	-4	2.93	2.24
PRESCOTT	38	-1	1.97	0.44
TUCSON	51	-3	3.20	2.50
YUMA	58	-2	1.22	1.00
AR FORT SMITH	47	5	3.02	0.42
LITTLE ROCK	49	5	5.24	1.71
CA BAKERSFIELD	51	-3	5.36	4.30
EUREKA	--	--	13.95	9.22
FRESNO	50	-1	4.58	2.80
LOS ANGELES	55	-2	13.30	10.80
REDDING	46	-4	15.80	11.36
SACRAM/MCCLELL	51	--	12.46	--
SAN DIEGO	58	-1	7.65	6.10
SAN FRANCISCO	53	0	13.61	10.44
CO ALAMOSA	24	2	0.03	-0.26
CO SPRINGS	32	0	0.34	-0.08
DENVER	34	1	0.23	-0.31
GRAND JUNCTION	36	1	0.48	0.00
PUEBLO	36	0	0.17	-0.14
CT BRIDGEPORT	38	7	4.00	0.99
HARTFORD	36	9	3.12	-0.11
DC WASHINGTON	43	6	5.21	2.50
DE WILMINGTON	41	7	2.95	0.04
FL DAYTONA BEACH	60	1	7.25	4.14
JACKSONVILLE	58	2	11.12	7.19
KEY WEST	71	0	4.87	3.07
MIAMI	69	1	6.61	4.53
ORLANDO	62	0	8.74	5.72
TAMPA	62	1	10.82	7.74
VALPARAISO/EGLIN	54	1	5.94	1.74
WEST PALM BEACH	66	0	6.23	3.54
GA ATHENS	48	2	7.72	3.30
ATLANTA	47	2	7.10	2.29
AUGUSTA	50	2	6.36	2.09
COLUMBUS	52	2	4.23	-0.62
MACON	50	2	6.61	1.87
SAVANNAH	54	2	6.88	3.66
HI HILO	72	0	2.24	-8.05
HONOLULU	73	0	0.21	-2.00
KAHULUI	72	0	0.50	-2.38
LIHUE	70	-2	0.59	-2.74
ID BOISE	40	4	1.39	0.32
LEWISTON	42	3	0.33	-0.56
POCATELLO	33	4	1.44	0.52
IL CHICAGO/O'HARE	39	13	1.70	0.34
MOLINE	38	13	3.15	1.92
PEORIA	39	13	2.64	1.22
ROCKFORD	36	14	1.64	0.50
SPRINGFIELD	40	12	2.71	0.94
IN EVANSVILLE	42	8	2.71	-0.41
FORT WAYNE	37	11	1.44	-0.47
INDIANAPOLIS	41	11	1.23	-1.23
SOUTH BEND	37	10	1.69	-0.21
IA BURLINGTON	41	14	3.12	1.96
CEDAR RAPIDS	37	14	2.17	1.15
DES MOINES	36	12	1.58	0.47
DUBUQUE	36	14	2.93	1.61
SIOUX CITY	35	11	0.46	-0.25
WATERLOO	35	14	1.80	0.72
KS CONCORDIA	38	7	1.10	0.35
DODGE CITY	40	5	0.33	-0.29
GOODLAND	36	4	0.68	0.29
TOPEKA	40	8	0.77	-0.27
WICHITA	41	6	0.31	-0.65
KY JACKSON	43	6	4.45	0.63
LEXINGTON	41	6	2.58	-0.63
LOUISVILLE	43	8	3.58	0.28
PADUCAH	44	7	4.75	0.86
LA BATON ROUGE	53	0	5.80	0.07
LAKE CHARLES	56	1	5.13	1.54
NEW ORLEANS	56	2	4.27	-1.74
SHREVEPORT	52	2	7.19	3.27
ME CARIBOU	20	8	2.62	0.70
PORTLAND	31	8	5.72	2.39
MD BALTIMORE	42	7	6.40	3.28
MA BOSTON	35	5	5.54	1.92
WORCESTER	33	8	3.17	-0.29
MI ALPENA	29	11	0.81	-0.48
GRAND RAPIDS	34	10	1.51	0.09
HOUGHTON LAKE	30	12	0.89	-0.28
LANSING	34	11	2.15	0.79
MARQUETTE	28	14	1.14	-0.59
MUSKEGON	35	10	1.74	0.25
MN DULUTH	29	17	2.72	1.92
INT'L FALLS	27	19	1.04	0.41
MINNEAPOLIS	32	14	0.80	-0.08
ROCHESTER	29	12	1.38	0.64
ST. CLOUD	29	15	0.74	0.11
MS JACKSON	50	2	5.51	0.81
MERIDIAN	50	1	5.80	0.37
TUPELO	48	3	5.94	1.23
MO COLUMBIA	41	9	4.30	2.48
KANSAS CITY	41	10	1.09	-0.01
SAINT LOUIS	43	9	2.93	0.81
SPRINGFIELD	40	4	4.28	2.11
MT BILLINGS	36	7	0.16	-0.49
BUTTE	24	2	0.41	0.04
GLASGOW	32	15	0.15	-0.12
GREAT FALLS	34	7	0.42	-0.15
KALISPELL	33	8	0.28	-0.82
MILES CITY	36	13	0.29	-0.15
MISSOULA	31	2	0.33	-0.46
NE GRAND ISLAND	36	9	0.41	-0.31
LINCOLN	36	10	0.92	0.20
NORFOLK	34	10	0.31	-0.46
NORTH PLATTE	35	7	0.40	-0.03
OMAHA	36	9	0.65	-0.12
SCOTTSBLUFF	35	5	0.64	0.17
VALENTINE	35	10	0.09	-0.34
NV ELY	29	0	1.67	1.02
LAS VEGAS	49	-2	2.89	2.41
RENO	36	-2	2.59	1.60
WINNEMUCCA	36	0	1.61	0.99
NH CONCORD	31	9	2.48	-0.05
NJ NEWARK	41	8	4.77	1.73
NM ALBUQUERQUE	39	-1	0.66	0.20
NY ALBANY	32	8	2.58	0.31
BINGHAMTON	31	8	4.48	2.15
BUFFALO	34	10	2.28	-0.03
ROCHESTER	33	8	2.34	0.24
SYRACUSE	31	7	3.14	0.99
NC ASHEVILLE	42	3	6.38	2.47
CHARLOTTE	50	7	3.82	-0.02
GREENSBORO	44	4	4.39	1.07
HATTERAS	48	3	8.13	4.01
RALEIGH	46	4	5.79	2.10
WILMINGTON	51	4	11.22	7.52
ND BISMARCK	30	15	1.67	1.24
DICKINSON	33	13	2.28	1.93
FARGO	28	16	1.51	1.06
GRAND FORKS	26	15	1.49	1.03
JAMESTOWN	27	13	1.70	1.23
WILLISTON	31	15	1.75	1.31
OH AKRON-CANTON	37	10	2.48	0.25
CINCINNATI	40	9	3.04	0.35
CLEVELAND	38	10	1.89	-0.30
COLUMBUS	40	11	2.48	0.24
DAYTON	39	10	2.32	0.15
MANSFIELD	37	10	2.50	0.48
TOLEDO	36	11	3.77	2.04
YOUNGSTOWN	37	11	1.85	-0.19
OK OKLAHOMA CITY	46	5	0.12	-1.44
TULSA	45	5	0.30	-1.67
OR ASTORIA	47	3	10.52	2.93
BURNS	30	0	2.91	2.15
EUGENE	45	1	6.21	0.57
MEDFORD	45	2	3.27	1.34
PENDLETON	43	4	1.19	0.05
PORTLAND	46	3	5.27	1.56
SALEM	45	3	6.18	1.68
PA ALLENTOWN	39	9	3.85	0.90
ERIE	36	10	1.34	-0.94
MIDDLETOWN	40	9	5.05	2.12
PHILADELPHIA	42	9	3.25	0.46
PITTSBURGH	38	10	2.56	0.17
SCRANTON	--	--	2.91	0.76
WILLIAMSPORT	37	9	5.98	3.20
RI PROVIDENCE	37	7	5.85	2.24
SC BEAUFORT	53	2	8.13	4.86
CHARLESTON	54	3	10.17	6.87
COLUMBIA	50	3	6.23	2.11
GREENVILLE	47	4	6.94	2.53
SD ABERDEEN	28	11	0.75	0.28
HURON	32	13	0.50	-0.18
RAPID CITY	35	8	0.49	-0.03
SIOUX FALLS	32	12	0.67	0.03
TN BRISTOL	43	5	2.14	-1.30
CHATTANOOGA	48	5	5.91	1.10
KNOXVILLE	46	6	2.71	-1.35
MEMPHIS	49	4	5.55	1.19
NASHVILLE	46	5	4.11	0.20
TX ABILENE	49	2	0.88	-0.48
AMARILLO	41	2	2.08	1.47
AUSTIN	56	3	3.26	1.09
BEAUMONT	56	2	5.03	1.65
BROWNSVILLE	65	2	1.72	0.66
CORPUS CHRISTI	61	3	2.72	0.76
DEL RIO	58	3	0.34	-0.61
EL PASO	48	0	0.15	-0.26
FORT WORTH	51	3	3.22	1.04
GALVESTON	--	--	4.98	2.72
HOUSTON	55	1	5.85	2.89
LUBBOCK	43	0	1.86	1.18
MIDLAND	49	2	0.50	-0.12
SAN ANGELO	50	2	0.53	-0.54
SAN ANTONIO	55	2	3.38	1.67
VICTORIA	57	1	3.33	1.33
WACO	52	2	4.06	1.97
WICHITA FALLS	47	3	2.34	0.66
UT SALT LAKE CITY	38	3	4.89	3.66
VT BURLINGTON	28	9	1.84	0.21
VA LYNCHBURG	41	3	6.08	3.04
NORFOLK	47	6	8.21	4.74
RICHMOND	44	5	5.76	2.60
ROANOKE	42	5	8.00	4.96
WASH/DULLES	41	7	5.81	3.00
WA HANFORD	42	--	1.15	0.53
OLYMPIA	43	2	5.04	-0.74
QUILLAYUTE	45	3	9.73	-2.86
SEATTLE-TACOMA	46	2	3.31	-0.68
SPOKANE	38	5	1.59	0.10
YAKIMA	39	3	1.43	0.69
WV BECKLEY	37	5	4.92	1.98
CHARLESTON	42	6	4.23	1.19
ELKINS	37	7	2.54	-0.46
HUNTINGTON	42	7	4.77	1.87
WI EAU CLAIRE	32	15	2.36	1.64
GREEN BAY	30	13	0.80	-0.23
MADISON	34	13	1.44	0.36
MILWAUKEE	35	12	2.19	0.74
WY CASPER	31	5	0.56	-0.04
CHEYENNE	31	2	0.29	-0.10
LANDER	26	0	0.57	0.00
SHERIDAN	31	4	0.08	-0.56
PR SAN JUAN	--	--	3.72	--

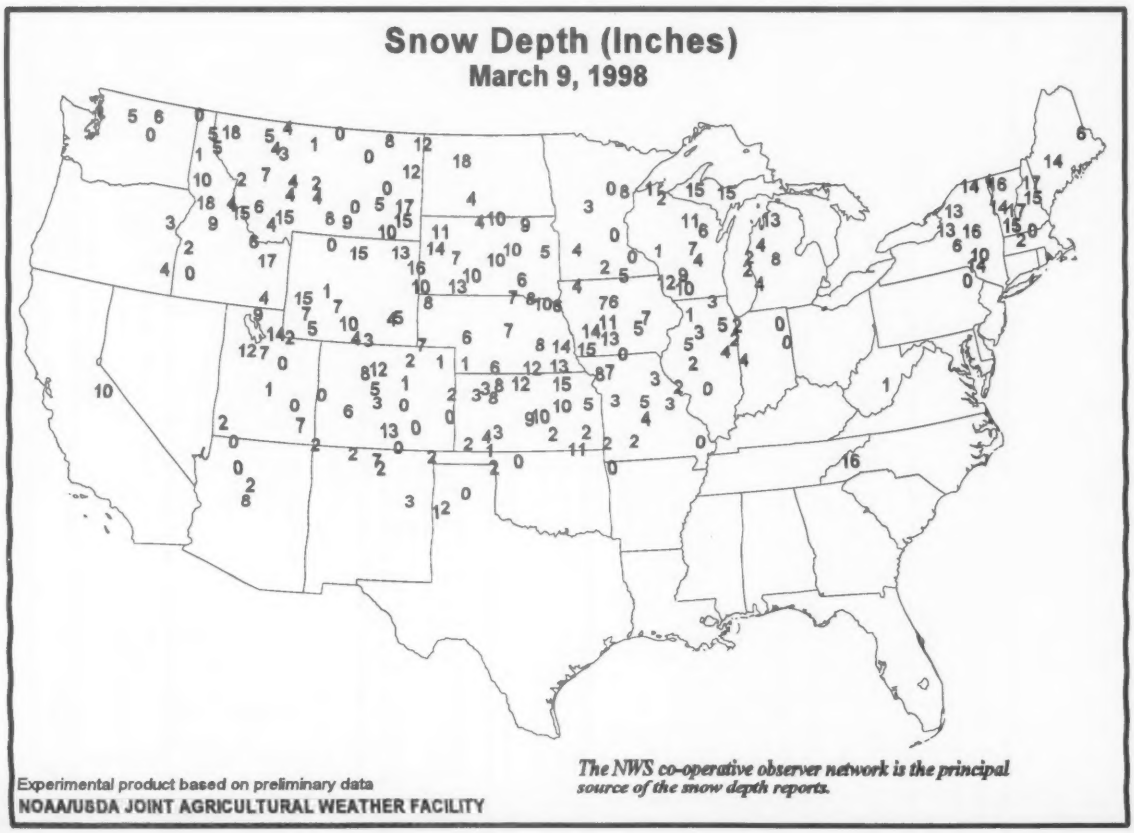
Based on 1961-90 normals.

National Agricultural Summary

March 2 - 8, 1998

HIGHLIGHTS

A cold front brought sharply colder weather to the High Plains late in the week and slowed winter wheat development. In Kansas and Oklahoma, the winter wheat crop was rated mostly good since wind and freeze damage was reported to be light. The crop has just begun jointing in Kansas, but nearly one-fourth of the crop has jointed in Oklahoma. Warmer weather in Texas aided wheat and oat development. In central and southern Texas, winter wheat was beginning to head. The western Corn Belt was hit by a heavy snow storm, while the Great Lakes, Northeastern, and Middle Atlantic States remained in a mild pattern. Frost was reported in the Southeastern United States, but no damage was reported to the peach blooms. The cold weather caused only minimal damage to vegetables in northern and central Florida. Pastures were stressed by the cool, wet weather. Sugarcane harvest and other field activities have been delayed by wet fields, but clearer weather in the vegetable areas allowed harvest progress to accelerate. Temperatures remained low in California and the Pacific Northwest, but California stayed favorably dry early in the week, allowing fieldwork to resume in most areas. Previously flooded small grain and alfalfa fields were recovering from excessive moisture and were growing well, but some low-lying wheat and barley fields remained wet and growth was stunted. Sunny weather assisted pollination of almonds and early varieties of stone fruit.


Snow Depth (Inches)
March 9, 1998
Experimental product based on preliminary data
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
The NWS co-operative observer network is the principal source of the snow depth reports.

International Weather and Crop Summary

March 1 - 7, 1998

HIGHLIGHTS

FSU-WESTERN: Unusually mild weather kept winter grain areas in the west and south snow-free and caused a further loss of cold hardiness.

EUROPE: Mild weather continued to prompt early greening of winter grains in the east and spurred rapid vegetative growth in the west and south.

NORTHWESTERN AFRICA: The fourth consecutive week of dryness reduced moisture for winter grains, nearing the heading stage in Morocco.

AUSTRALIA: Warm, dry weather continued, benefiting mature cotton and sorghum.

SOUTH AFRICA: A surge of summer warmth aided growth of corn and other summer crops.

SOUTHEAST ASIA: In Java, widespread showers continued to benefit main-season rice and eased long-term moisture deficits. Drought continued across the eastern Philippines and eastern Malaysia.

EASTERN ASIA: Winter wheat continued to break dormancy across the North China Plain.

SOUTH AMERICA: In southern Brazil, drier weather eased last week's excessive moisture and reduced disease potential for maturing soybeans.

NOTICE: Due to an outage of the Cray computers at the National Centers for Environmental Prediction, much of the international weather data for Saturday, March 7 is missing. As a result, the weekly precipitation totals shown in the following maps may understate the actual amounts.

February 1998

MONTHLY DATA FROM SELECTED FOREIGN CITIES
CLIMATE PREDICTION CENTER-NCEP-NWS-NOAA
**** DATA NOT AVAILABLE*

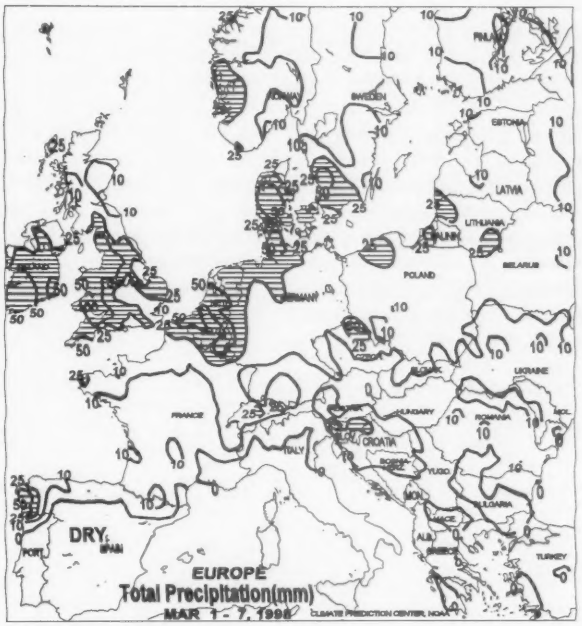
COUNTRY	CITY	TEMPERATURE (C) AVG MAX	AVG MIN	HI MAX	LO MIN	AVG	DPART F/NRM	PRECIPITATION (MM) TOTAL	DPART F/NRM
NORWAY	OSLO	3	-3	12	-19	0	6.7	25	-24
SWEDEN	STOCKHOLM	4	-1	8	-15	1	4.1	0	-26
FINLAND	HELSINKI	-1	-8	9	-21	-5	2.1	34	4
UKINGDO	GLASGOW	10	6	14	-3	8	3.7	147	59
	EDINBURGH	11	6	16	-3	8	4.8	42	0
	LONDON	11	3	17	-7	7	2.7	8	-44
IRELAND	DUBLIN	11	5	16	-2	8	3.1	13	-38
ICELAND	REYKJAVIK	1	-3	9	-11	-1	-1.1	121	49
DENMARK	COPENHAGEN	6	2	13	-10	4	4.5	38	-3
LUXEMBO	LUXEMBOURG	8	1	16	-11	5	3.3	6	-83
SWITZERL	ZURICH	8	1	16	-7	5	3.5	30	-43
	GENEVA	10	-1	18	-8	5	2.3	13	-68
FRANCE	PARIS/ORLY	10	2	18	-8	6	***	7	**
	STRASBOURG	11	-2	20	-10	5	2.3	27	-6
	BOURGES	11	1	19	-7	6	1.5	15	-43
	BORDEAUX	15	3	23	-5	9	2.1	25	-55
	TOULOUSE	14	4	21	-3	9	2.5	11	-40
	MARSEILLE	15	4	22	-2	10	1.9	6	-48
SPAIN	VALLADOLID	14	2	21	-2	8	2.6	10	-30
	MADRID	15	4	23	-1	10	3.0	42	-9
	SEVILLE	20	10	23	7	15	2.8	82	19
PORTUGA	LISBON	17	10	20	7	14	2.0	65	-35
GERMANY	HAMBURG	8	4	16	-11	6	4.8	20	-21
	BERLIN	9	4	16	-11	6	5.5	12	-22
	DUSSELDORF	10	3	17	-9	7	4.3	6	-47
	LEIPZIG	8	2	17	-14	5	5.1	17	-14
	DRESDEN	8	2	14	-17	5	5.6	28	-10
	STUTTGART	10	-2	20	-10	4	3.4	14	-33
	NURNBERG	9	-1	18	-15	4	3.2	7	-33
AUSTRIA	VIENNA	11	1	19	-15	6	5.2	4	-27
	INNSBRUCK	11	-2	19	-11	5	4.0	10	-32
CZECHRE	PRAGUE	8	0	14	-16	4	4.8	14	-9
POLAND	WARSAW	6	0	13	-16	3	5.0	43	21
	LODZ	6	0	14	-14	3	4.9	48	17
	KATOWICE	7	0	16	-19	4	5.8	48	12
	PRZEMYSL	7	0	16	-17	3	5.2	43	14
HUNGARY	BUDAPEST	11	1	18	-11	6	5.0	0	-32
YUGOSLA	BELGRADE	12	3	21	-6	7	4.4	2	-41
ROMANIA	BUCHAREST	9	-3	21	-13	3	3.2	15	-23
BULGARIA	SOFIA	9	0	19	-10	4	2.9	50	14
ITALY	MILAN	15	2	23	-3	9	4.8	29	-32
	VERONA	14	2	21	-3	8	3.9	4	-44
	VENICE	12	1	18	-5	7	2.0	5	-47
	GENOA	15	9	23	3	12	3.4	19	-72
	ROME	15	4	19	0	10	0.7	98	23
	NAPLES	16	6	19	1	11	2.1	56	-41
GREECE	THESSALONIKA	13	4	19	-2	8	1.8	58	17
	LARISSA	14	2	20	-3	8	1.3	60	21
	ATHENS	16	8	21	3	12	1.2	25	-8
TURKEY	ISTANBUL	10	4	17	1	7	1.5	61	-9
	ANKARA	7	-5	17	-14	2	0.8	44	14
CYPRUS	LARNACA	18	8	22	3	13	0.6	7	-54
ESTONIA	TALLINN	-1	-5	6	-17	-3	2.7	44	15
LITHUANI	KAUNAS	3	-1	9	-12	1	4.9	42	15
BELARUS	MINSK	2	-3	9	-14	-1	5.3	32	0
RUSSIA	KAZAN	-13	-19	2	-30	-17	-5.4	66	37
	MOSCOW	-5	-11	7	-25	-8	-0.5	39	3
	YEKATERINBURG	-12	-19	3	-29	-15	-3.0	71	51
	OMSK	-11	-18	1	-33	-14	2.3	86	71
	NOVOSIBIRSK	-9	-15	-1	-30	-12	5.8	23	6
	BARNAUL	-7	-17	1	-30	-12	3.0	28	4
	KHABAROVSK	-8	-20	4	-30	-14	3.1	22	11
	VLADIVOSTOK	-2	-9	4	-16	-5	5.1	34	15
	SARATOV	-6	-12	4	-27	-9	1.7	43	20
	VOLGOGRAD	-4	-11	2	-28	-8	1.1	56	28
	ASTRAKHAN	-1	-9	8	-24	-5	-0.1	56	48
	KRASNODAR	3	-5	13	-18	-1	-0.9	112	57
	ORENBURG	-10	-17	0	-35	-13	-0.3	72	51
KAZAKHS	TSELINOGRAD	-9	-16	-2	-32	-14	2.2	64	50
	KARAGANDA	-9	-17	-1	-29	-13	1.2	57	38

Based on Preliminary Reports

February 1998

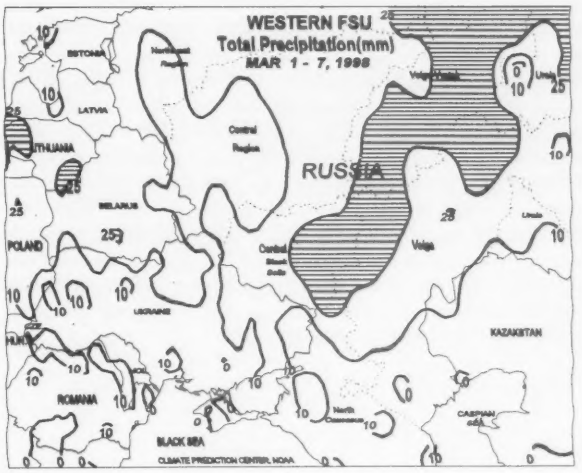
COUNTRY	CITY	TEMPERATURE (C) AVG MAX	AVG MIN	HI MAX	LO MIN	AVG	DPART F/NRM	PRECIPITATION (MM) TOTAL	DPART F/NRM
GEORGIA	TBILISI	8	-1	17	-7	3	0.1	4	-23
UZBEKIST	TASHKENT	6	-2	20	-11	2	-0.3	90	[illegible]
TURKMENI	ASHKHABAD	8	-1	23	-7	4	-0.2	114	87
SYRIA	DAMASCUS	15	2	21	-3	9	0.5	6	-23
ISRAEL	JERUSALEM	**	**	18	2	**	***	**	**
PAKISTAN	KARACHI	27	**	32	10	**	***	0	-8
INDIA	AMRITSAR	22	7	26	2	14	0.3	24	-8
	NEW DELHI	24	11	28	6	17	0.2	19	0
	AHMEDABAD	30	14	35	8	22	-0.2	0	-2
	INDORE	29	12	32	9	21	0.4	0	-3
	CALCUTTA	28	17	33	12	23	-0.2	48	36
	VERAVAL	29	17	33	13	23	0.9	3	1
	BOMBAY	31	18	36	13	25	0.3	0	-1
	POONA	30	13	35	9	21	-0.7	0	-2
	BEGAMPET	32	20	37	16	26	1.1	0	-8
	VISHAKHAPATNAM	29	23	31	21	26	***	46	**
	MADRAS	33	23	36	20	28	2.1	0	-14
	MANGALORE	34	22	37	19	28	1.0	0	-2
HONGKO	KINGS PEAK	19	15	27	8	17	***	218	**
S KOREA	SEOUL	8	0	15	-8	4	5.6	33	12
JAPAN	SAPPORO	0	-7	5	-16	-4	0.1	74	-21
	NAGOYA	12	3	19	-2	7	2.8	91	26
	TOKYO	11	4	23	0	7	1.8	111	50
	YOKOHAMA	11	4	23	1	7	2.0	113	41
	KYOTO	12	4	20	-1	8	3.1	60	-7
	OSAKA	12	5	20	0	8	2.6	98	37
THAILAND	PHETCHABUN	36	21	39	18	28	2.6	22	-4
	BANGKOK	34	27	37	25	31	2.5	34	9
MALAYSIA	KUALA LUMPUR	35	25	36	24	30	3.4	164	8
VIETNAM	HANOI	22	18	30	11	20	2.6	8	-20
CHINA	HARBIN	-1	-14	8	-22	-8	8.1	3	-2
	HAMI	6	-6	14	-16	-1	3.4	4	3
	LANCHOW	9	-3	15	-10	3	4.7	0	-2
	BEIJING	6	-2	14	-11	3	4.4	27	21
	TIENTSIN	7	-3	13	-11	2	3.2	11	5
	LHASA	10	-5	16	-10	3	1.3	0	0
	KUNMING	19	6	22	2	12	2.7	5	-9
	CHENGCHOW	11	1	22	-5	6	3.4	24	10
	YEHCHANG	13	5	25	1	9	2.9	10	-19
	HANKOW	12	5	27	-1	9	3.8	42	-16
	CHUNGKING	13	8	20	3	11	***	30	**
	CHIHKIANG	12	5	26	1	9	2.6	62	14
	WU HU	11	4	27	-2	7	***	37	**
	SHANGHAI	11	5	26	-2	8	***	60	**
	NANCHANG	13	7	27	0	10	3.5	104	2
	TAIPEI	19	15	27	9	17	1.9	430	294
	CANTON	18	13	26	5	16	1.5	113	49
	NANNING	18	13	31	7	16	2.1	17	-29
CANARY I	LAS PALMAS	24	18	27	18	21	3.5	10	-9
MOROCC	CASABLANCA	21	13	27	7	17	3.1	29	-30
	MARRAKECH	22	11	27	8	17	3.0	31	-7
ALGERIA	ALGER	19	8	26	2	12	1.1	50	-25
	BATNA	14	1	20	-4	8	1.4	22	-8
TUNISIA	TUNIS	18	8	22	4	13	1.1	32	-25
NIGER	NIAMEY	37	21	43	16	29	1.4	0	0
MALI	TIMBUKTU	34	21	38	14	28	3.6	0	0
	BAMAKO	37	23	41	19	30	2.2	2	2
MAURITAN	NOUAKCHOTT	33	19	40	12	26	3.2	0	0
SENEGAL	DAKAR	27	21	33	20	24	3.3	0	-1
CHAGOS	DIEGO GARCIA	**	**	36	25	**	***	**	**
LIBYA	TRIPOLI	19	8	28	4	13	0.2	28	-7
	BENGHAZI	18	10	26	2	14	0.8	26	-16
EGYPT	CAIRO	20	11	29	8	16	0.6	0	-3
	ASWAN	25	12	32	6	18	0.5	0	0
ETHIOPIA	ADDIS ABABA	24	12	27	8	**	***	39	2
KENYA	NAIROBI	27	16	29	11	21	1.1	139	91
TANZANIA	DAR ES SALAAM	32	24	36	16	28	0.4	142	85
GABON	LIBREVILLE	32	24	33	21	28	1.0	130	-142
TOGO	LOME	34	26	37	22	**	***	0	-32
BURKINA	OUAGADOUGOU	38	22	43	18	30	1.9	0	0
COTE D'I	ABIDJAN	33	27	35	23	30	2.4	86	39
MOZAMBI	MAPUTO	30	23	33	20	27	0.6	60	-72
ZAMBIA	LUSAKA	27	**	31	16	**	***	94	-95
ZIMBABW	HARARE	28	17	31	16	23	2.7	42	-105
S AFRICA	PRETORIA	29	19	35	15	24	1.7	81	4
	JOHANNESBURG	25	14	30	11	20	0.7	78	-16
	BETHAL	**	**	29	10	**	***	66	-34
	DURBAN	28	22	32	17	25	1.4	159	45
	CAPE TOWN	29	18	35	14	23	2.6	0	-16
CANADA	TORONTO	3	-4	10	-12	0	5.7	36	-9
	MONTREAL	0	-8	6	-20	-4	5.0	55	-2
	WINNIPEG	-2	-9	5	-28	-5	10.4	48	33
	REGINA	-2	-9	6	-23	-5	7.8	16	3
	SASKATOON	-2	-10	5	-23	-6	8.4	3	-9
	LETHBRIDGE	7	-8	14	-16	0	4.3	8	-5
	CALGARY	3	-6	12	-16	-3	3.3	4	-6
	EDMONTON	1	-9	9	-17	-4	4.9	1	-16
	VANCOUVER	10	4	16	-2	7	2.4	67	-56
MEXICO	GUADALAJARA	**	**	25	5	**	***	**	**
	MEXICO CITY	**	**	27	3	**	***	**	**
	ACAPULCO	**	**	33	20	**	***	**	**
BERMUDA	ST. GEORGES	19	16	22	14	18	-0.3	135	28
BAHAMAS	NASSAU	25	20	31	14	22	1.2	97	57
JAMAICA	KINGSTON	31	23	32	19	27	1.3	35	17
P RICO	SAN JUAN	30	22	34	9	26	0.6	94	40
GUADELO	RAIZET	30	22	31	19	26	2.2	13	-38
MARTINIQ	LAMENTIN	30	22	32	20	26	2.0	27	-112
BARBADO	BRIDGETOWN	30	24	31	21	27	1.7	11	-30
TRINIDAD	PORT OF SPAIN	32	24	36	21	28	2.7	35	-1
COLOMBI	BOGOTA	22	7	24	1	**	***	24	-15
VENEZUE	CARACAS	30	24	36	22	27	2.2	50	35
F GUIANA	CAYENNE	31	25	32	22	28	2.0	93	-213
BRAZIL	RECIFE	32	25	34	22	28	1.4	42	-87
	BELO HORIZONTE	31	22	35	17	26	2.6	185	-10
	FRANCA	28	20	32	17	24	5.8	344	116
	RIO DE JANEIRO	**	26	37	22	**	***	87	-52
	LONDRINA	28	21	35	16	25	0.7	312	133
	SANTA MARIA	28	20	33	12	24	0.2	167	37
	PORTO ALEGRE	28	21	32	14	25	0.0	54	-50
PERU	LIMA	31	25	32	24	28	4.8	1	1
BOLIVIA	LA PAZ	18	5	20	3	10	1.7	72	-32
CHILE	SANTIAGO	27	13	35	9	20	0.0	7	7
ARGENTIN	IGUAZU	29	21	34	14	25	***	317	**
	FORMOSA	30	23	36	17	27	-0.2	344	235
	CERES	27	19	32	13	23	-1.7	374	255
	CORDOBA	24	16	34	11	20	-2.4	220	105
	RIO CUARTO	23	15	31	9	19	-2.7	120	33
	ROSARIO	27	18	37	12	22	-1.0	92	-26
	BUENOS AIRES	26	16	32	8	21	-1.6	46	-57
	SANTA ROSA	24	14	33	9	19	-3.4	128	58
	TRES ARROYOS	24	14	32	6	19	-1.6	118	52
NEW CAL	NOUMEA	31	24	33	23	28	1.9	83	-61
FIJI	NAUSORI	29	24	31	21	26	0.0	135	-136
SAMOA	PAGO PAGO	**	**	34	26	**	***	38	-286
TAHITI	PAPEETE	32	26	33	24	29	1.9	102	-126
AUSTRALI	DARWIN	32	25	33	23	28	0.2	428	85
	BRISBANE	29	22	33	19	26	0.7	58	-92
	PERTH	32	16	41	11	24	-0.9	0	-14
	CEDUNA	27	14	43	9	21	-1.1	20	6
	ADELAIDE	26	15	38	11	20	-1.9	20	-23
	MELBOURNE	25	13	40	8	19	-1.4	24	-22
	WAGGA	31	15	38	6	23	-0.8	32	-2
	CANBERRA	29	13	35	6	21	1.1	41	-17
INDONESI	DJAKARTA	31	**	34	24	**	***	111	**
PHILIPPI	MANILA	32	26	34	23	29	2.3	0	-8

Based on Preliminary Reports



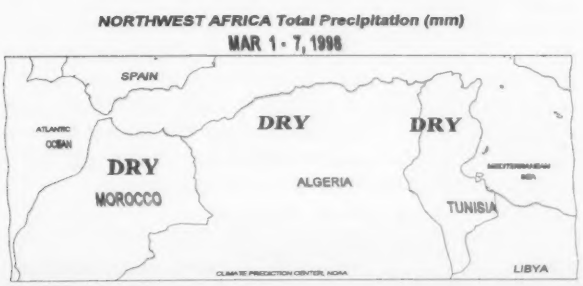
EUROPE

The fourth consecutive week of unusually mild weather continued over Europe. Weekly temperatures averaged 3 to 5 degrees C above normal in the west and 4 to 8 degrees C above normal in the east. Extreme maximum temperatures ranged from 15 to 20 degrees C in northern Europe and 20 to 29 degrees C in the south. Winter grains continued greening in eastern Europe and were rapidly developing in western and southern areas. Widespread rain (10-40 mm, with local amounts in excess of 40 mm) fell from the United Kingdom eastward through the Benelux countries and Germany into Poland. The moisture, along with the mild weather conditions, benefited winter grains but slowed spring fieldwork. Farther south, dry weather prevailed over Mediterranean crop areas from Spain eastward through Italy into the Balkan peninsula. The dryness in these areas favored fieldwork for spring planting. Reports indicated that sunflower, corn, and soybean planting was just getting underway in Italy.



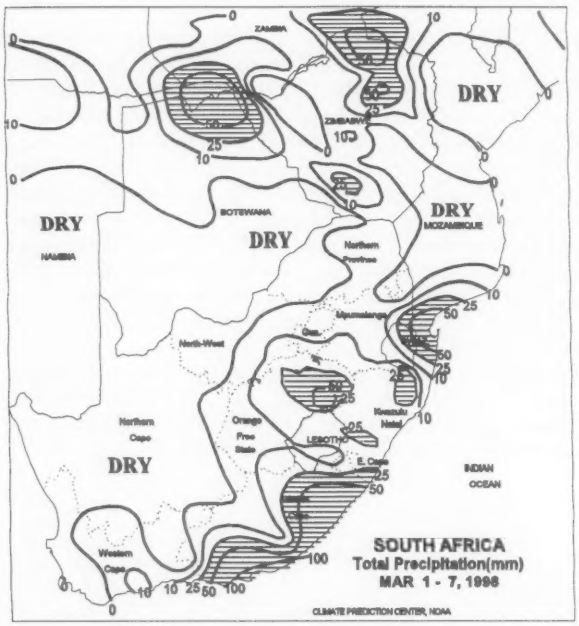
FSU-WESTERN

Unseasonably mild weather prevailed over most of the region, causing further melting of protective snow cover. Winter grain areas in Ukraine, the Baltics, Belarus, and most of southern Russia remained snow-free during the week. Furthermore, the mild weather in these areas caused a further loss of cold hardiness in winter grains, leaving them highly vulnerable to potential extreme cold. Weekly temperatures averaged 6 to 10 degrees C above normal in most areas. Extreme maximum temperatures continued to exceed 10 degrees C in Belarus, Ukraine, and the southern portion of the North Caucasus region in Russia. Some greening in winter grains may have occurred in the southwestern Ukraine and Moldova, where weekly temperatures have averaged 5 to 8 degrees C for the past 2 weeks. Typically, winter grains break dormancy in Ukraine and the North Caucasus region in Russia in early April. Widespread light precipitation (8-25 mm), mainly rain, fell in most areas. Greatest amounts of moisture (25-46 mm) fell in a narrow band that stretched from the southern Black Soils Region northeastward through the Volga Vyatsk Region.



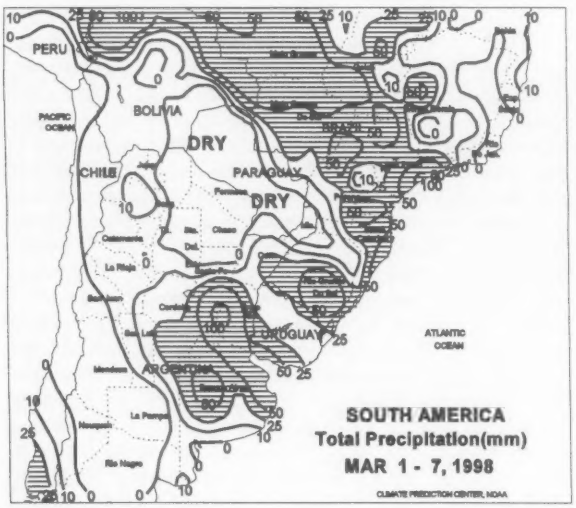
NORTHWESTERN AFRICA

The fourth consecutive week of dry weather prevailed over winter grain areas in Morocco, depleting moisture reserves. Winter grains in Morocco are approaching the heading stage, when moisture conditions become most critical in determining yield prospects. As a result, rain is needed soon to prevent potential declines in yield prospects. Farther east, prolonged dryness continued in western Algeria, causing a further decline in crop conditions. Dry weather returned to winter grain areas in eastern Algeria and Tunisia, following last week's beneficial rains. Subsoil moisture reserves are likely limited throughout Morocco, Algeria, and Tunisia, necessitating timely rains during the remainder of the growing season to prevent significant declines in yield prospects.



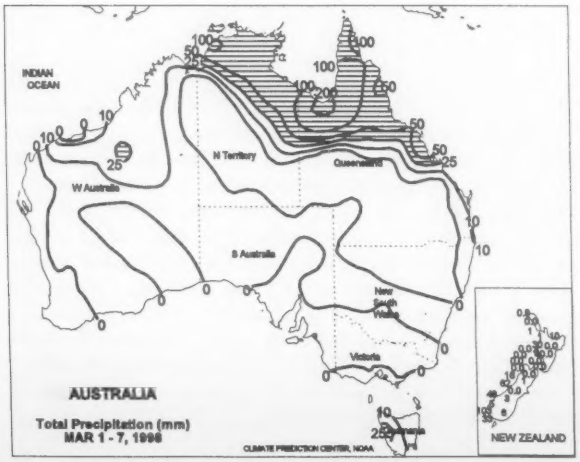
SOUTH AFRICA

A late surge of summer warmth aided development of corn and other summer crops. At week's end, temperatures reached the low to mid 30's C throughout the corn belt, with the highest temperatures occurring in northwestern growing areas. Rainfall continued to be generally light and scattered, although moderate showers (25-50 mm) fell over sections of eastern Free State and the grain areas of Kwazulu-Natal. Moderate to heavy rain (25-50 mm or more, locally exceeding 100 mm) continued in Eastern Cape, but sugarcane areas of Kwazulu-Natal remained mostly dry for a second week, bringing additional relief to recently flooded crops.



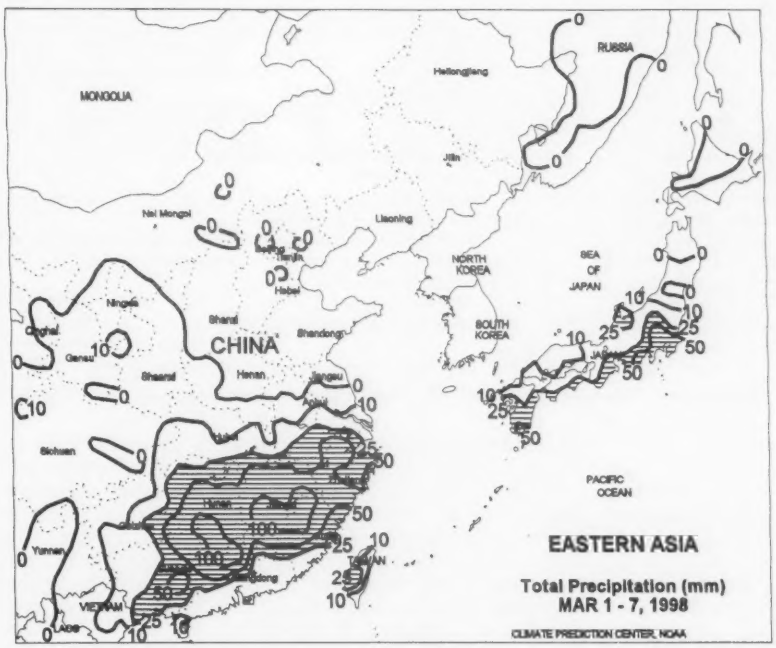
SOUTH AMERICA

In southern Brazil, drier weather (less than 10 mm) in Rio Grande do Sul eased excessive wetness and reduced disease potential for maturing soybeans. Continued dry weather will be beneficial in further reducing disease potential across the region. Elsewhere in southern Brazil, moderate showers (15-75 mm) favored late-filling soybeans, but slowed early harvesting. In central Argentina, moderate showers (30-70 mm, with isolated amounts greater than 100 mm) aided vegetative to reproductive second-crop soybeans but slowed corn harvesting. The heavier rain caused flooding, especially in portions of Entre Rios and northern Santa Fe. Dry weather benefited maturing cotton across northern Argentina. According to reports as of February 27, corn harvesting was 2 percent complete and sunflower harvesting was 11 percent complete.



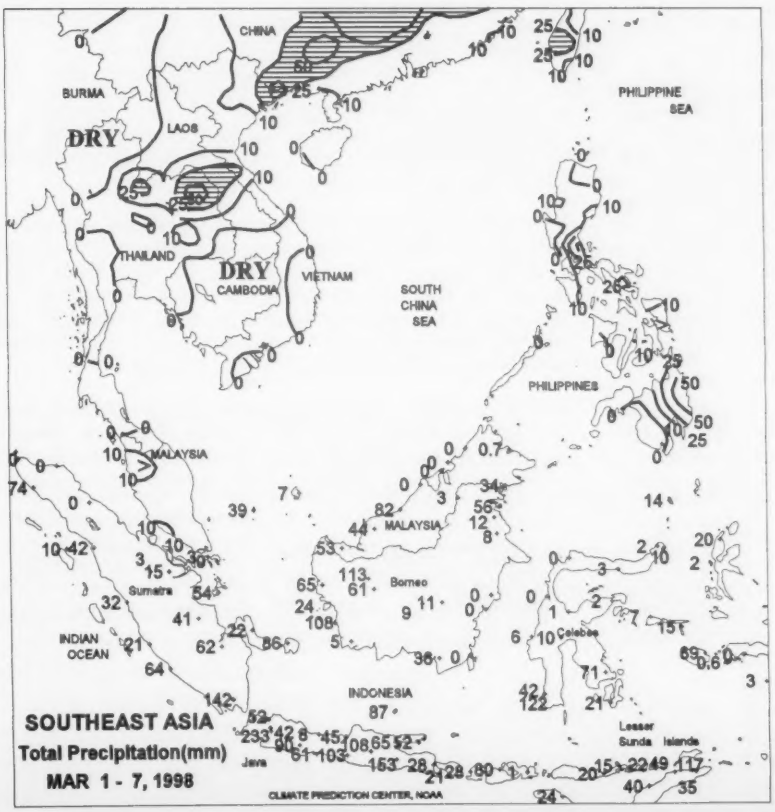
AUSTRALIA

Another week of warm, dry weather benefited maturing sorghum and cotton in the primary growing areas of Queensland and New South Wales. The dryness extended into the southern sugarcane areas, but a few heavy tropical showers (100 mm or greater) lingered over the north. Daily highs were in the lower to middle 30's C in the main summer crop areas. Higher temperatures (1-3 degrees C above normal, highs from the upper 30's to lower 40's C) were recorded in agricultural areas of Western Australia and grazing areas of western Queensland and South Australia. In New Zealand, rainfall was light (10 mm or less) in most agricultural areas.



EASTERN ASIA

Winter wheat continued to break dormancy across the North China Plain. Temperatures averaged 4 to 7 degrees C above normal, with highs ranging from 15 to 18 degrees C. Late-week rain (5-25 mm) benefited greening wheat across the southern North China Plain. Across the Yangtze Valley, moderate to heavy rain (15-75 mm, with isolated amounts greater than 100 mm) favored early double-crop rice but possibly reduced winter oilseed quality.



SOUTHEAST ASIA

In Java and southern Sumatra, widespread heavy showers (40-100 mm, with isolated amounts greater than 200 mm) continued to benefit main-season rice and reduce long-term moisture deficits. Below-normal rainfall (5-30 mm) provided little drought relief in the eastern Philippines and the oil palm areas of eastern Malaysia (Sarawak and Sabah).

The *Weekly Weather and Crop Bulletin* (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the *Weekly Weather Chronicle*. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53rd Congress, 3rd Session. NOAA is responsible for managing, printing, and distributing the bulletin. The contents may be reprinted freely, with proper credit.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center
Managing Editor ..... ***Douglas Le Comte*** (202) 720-7919
fax (202) 720-1455
Editor ..... ***Brad Rippey*** (202) 720-1444
Meteorologists ..... ***Jeff Savadel and Brian Morris***
Special Requests ..... (202) 720-7917
Subscriptions ..... ***John Kopman*** (301) 763-8227, ext. 7534
fax (301) 763-8125

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(Continued from front cover)
rain to **California** on March 5-6 before intensifying across the **Southwest** at week's end. As a result, heavy snow developed from the mountains of the **Four Corners States** to the **central Plains** and **Midwest**, while flooding rains erupted across the **Southeast**.

Early in the week, snowy, windy conditions subsided on the **northern Plains**. February 24 - March 2 snowfall reached 103 inches in **Lead, SD** and 16 inches in **Hulett, WY**. By March 3, colder air punched southeastward, producing the lowest temperature (22°F) in **Oklahoma City, OK** since January 15. Farther east, a 40-day streak (January 20 to March 2) of above-normal temperatures ended in **Pittsburgh, PA**. Across the **South**, representative minima of 29°F (on Tuesday) in **Lufkin, TX** and 30°F (on Wednesday) in **Macon, GA** were not low enough to cause significant damage to peaches and other early-blooming trees.

During the early- to midweek period, precipitation spread from the **Northwest** onto the **northern Plains**. In **Montana**, snowfall covered previously bare ground to a depth of 10 inches in **Billings**. Farther west, generally light rain returned to **California** on Thursday. Downtown **San Francisco** netted 0.66 inches, boosting their seasonal rainfall to 39.17 inches, behind only 1861-62 (49.27 inches) and 1889-90 (45.85 inches). According to **California's** Department of Water Resources, the State's network of 155 reservoirs contained 9.38 billion gallons of water (118 percent [%] of normal and 76% of capacity) on February 28, up from 8.74 billion gallons (117% of normal and 71% of capacity) a month ago. In addition, the water equivalent of the **Sierra Nevada** snowpack, which gained 20 inches during February, stood at 40 inches (165% of normal) on March 1.

Late in the week, a major snow storm unfolded across the **Southwest**. March 5-7 snowfall totaled 9.6 inches in **Bellemont, AZ** and 40.0 inches in **southern Utah** at **Brian Head**. Wind gusts were clocked to 56 mph on Friday in **Winslow, AZ** and 55 mph on Saturday at two locations in **Washington County, Utah**. Snow spread into the **Plains** and **Midwest** at week's end, and by midnight Saturday, snowfall reached 0.6 inches in **Lubbock, TX**, 6.2 inches in **North Platte, NE**, 7.0 inches in **Dodge City, KS**, 6.8 inches in **Sioux City, IA**, and 4.1 inches in **Madison, WI**. Farther east, rainfall during the 96-hour period ending at 6 a.m. CST on Sunday (March 8) totaled 4 to 12 inches in **eastern Louisiana**, parts of **Mississippi**, extreme **western Georgia**, and most of **Alabama** except the northwest. Across **southern Alabama**, severe flooding developed along the **Pea River** and its tributaries at **Elba**, where a levee ruptured on March 8, inundating much of the town. The river crested at **Elba** on Sunday night at 39.05 feet, the third-highest level on record and 0.72 feet above the July 1994 (Tropical Storm Alberto) crest. In the **West**, a half-dozen daily-record lows were set on Saturday, including 30°F in **Redding, CA**, 21°F in **Boise, ID**, and -18°F in **Laramie, WY**. *More details on snow, cold weather, and flooding will appear in next week's Bulletin.*

(Continued from page 7)
left feedlots and pastures muddy as well. Farmers were concerned about the effects of the mild weather on insect populations, weed pressures, and disease problems for the upcoming growing season.

In the Northeastern United States, maple producers began tapping trees. Although the warm weather did not adversely affect fruit trees during February, growers were concerned that tender buds could sustain damage later if the weather suddenly turned colder. Cleanup from the January ice storm continued throughout the month. Farmers were still assessing damage from the storm, but some damage to alfalfa fields and sugar bushes was noted.

In California, record rainfall in many areas hampered vegetable harvests, curtailed field preparations, and postponed tomato planting. Standing water in low-lying areas stressed crops. In the Pacific Northwest, warm weather was bringing fruit trees out of dormancy earlier than normal.

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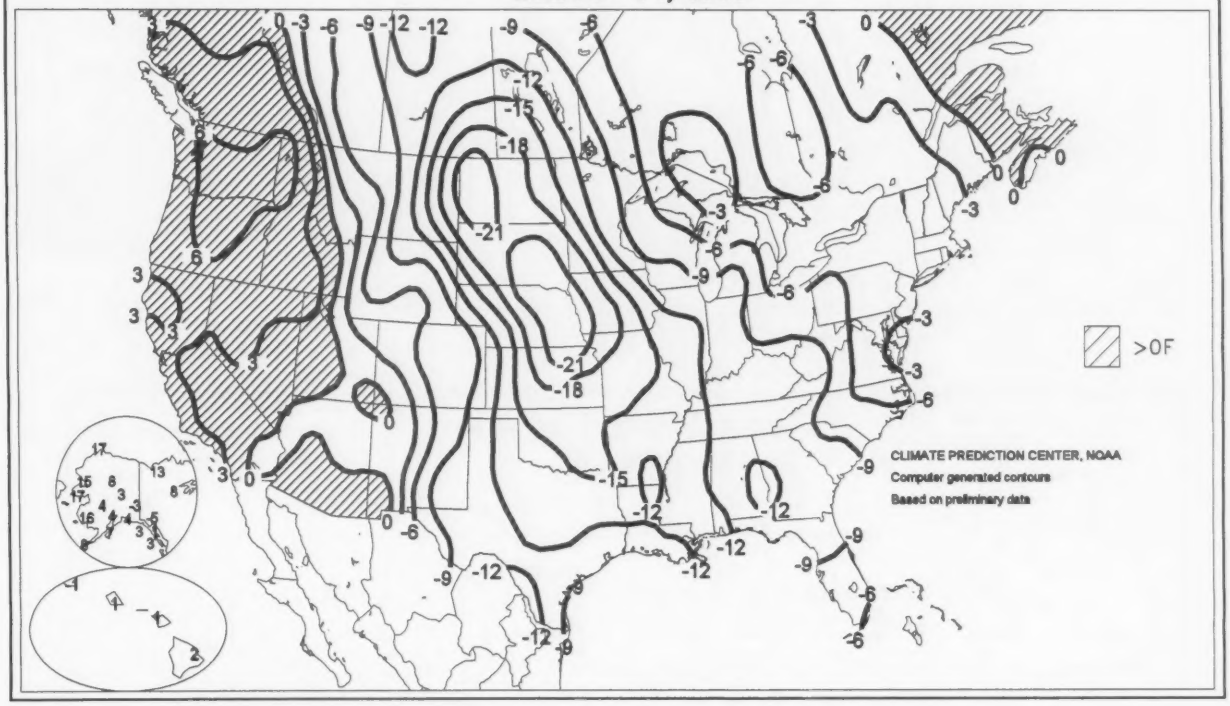
Volume 85, No. 11 March 17, 1998

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service
and World Agricultural Outlook Board

Departure of Average Temperature from Normal (°F)
MAR 8 - 14, 1998



HIGHLIGHTS

March 8 - 14, 1998

Arctic air overspread areas **east of the Rocky Divide**, the first time in 2 months that extremely cold weather affected any part of the Nation. During a 4-day period (March 10-13), more than 130 daily-record lows were tied or broken, mostly from the **northern Plains** and **upper Midwest** into the **Southeast**. Weekly temperatures in these areas averaged 10 to 24°F below normal despite some late-week warming. In contrast, weekly readings were as much as 7°F above normal in the **Northwest**. Generally light precipitation fell along the **West Coast**, although a late-week storm delivered locally heavy rain to **southern California**. Significant precipitation developed across the **Southwest** and

(Continued on back cover)

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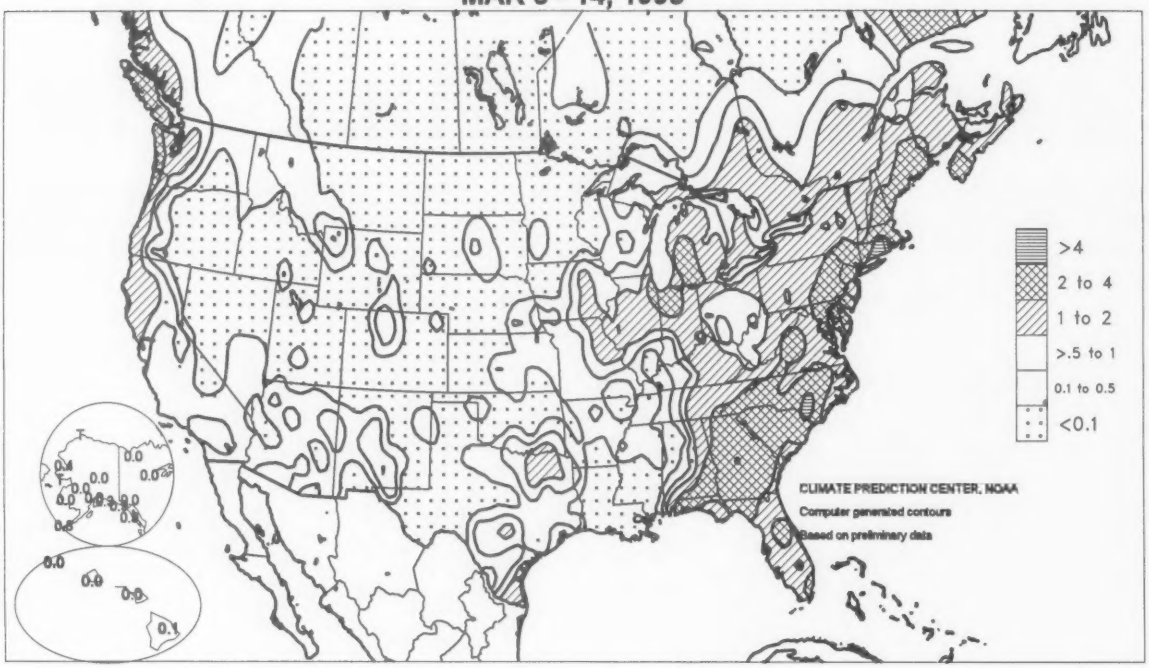
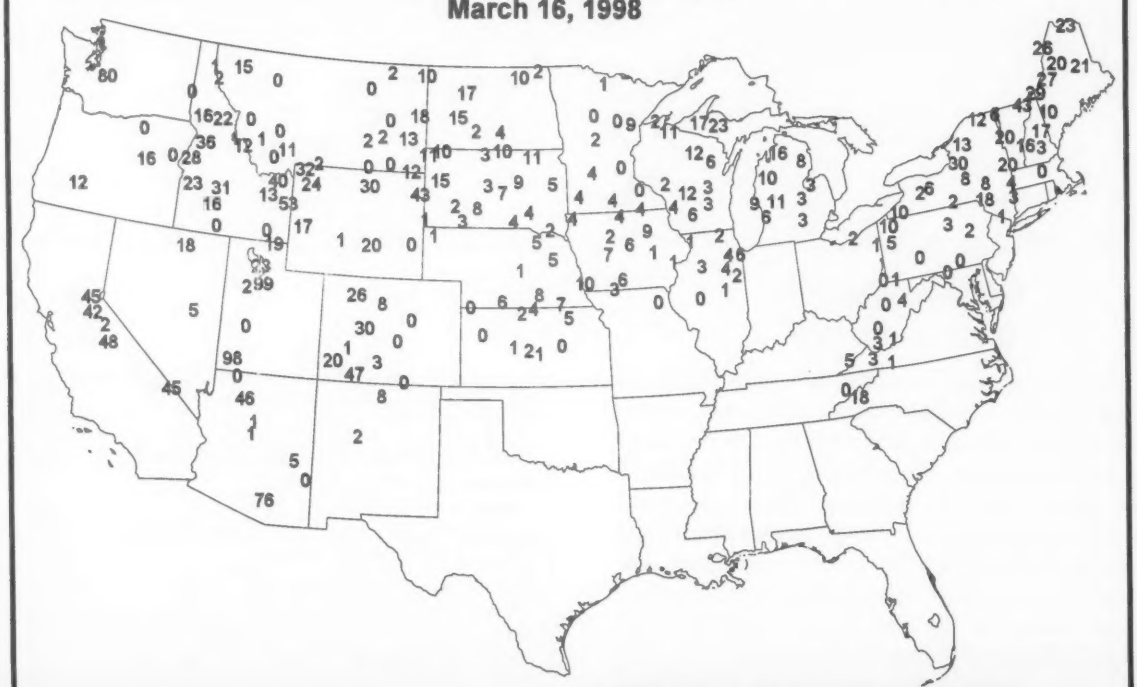
Total Precipitation (Inches)
MAR 8 - 14, 1998

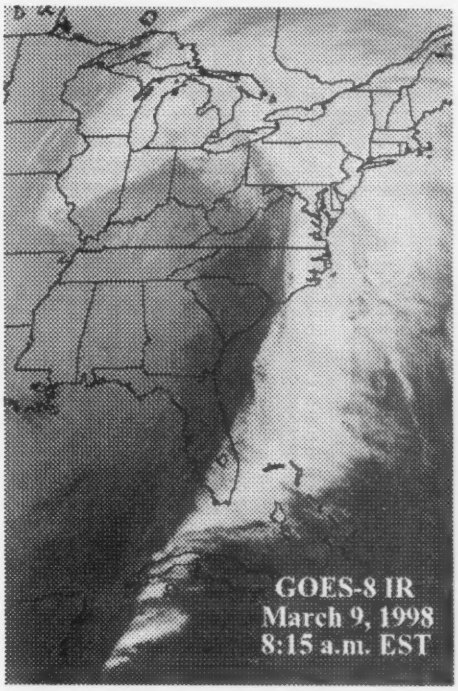


Snow Depth (Inches)
March 16, 1998



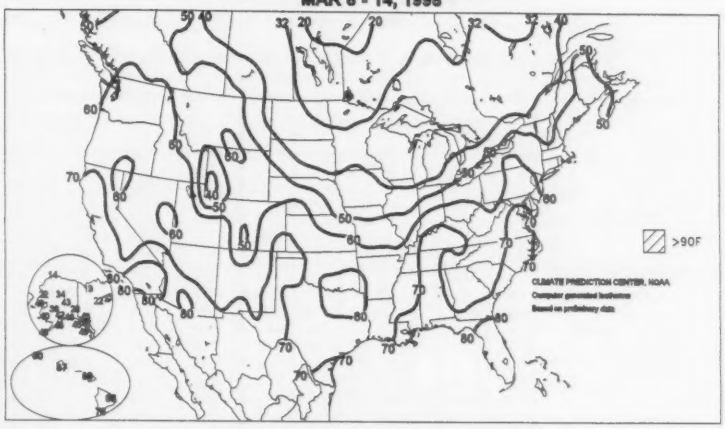
Experimental product based on preliminary data
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY

The NWS co-operative observer network is the principal source of the snow depth reports.

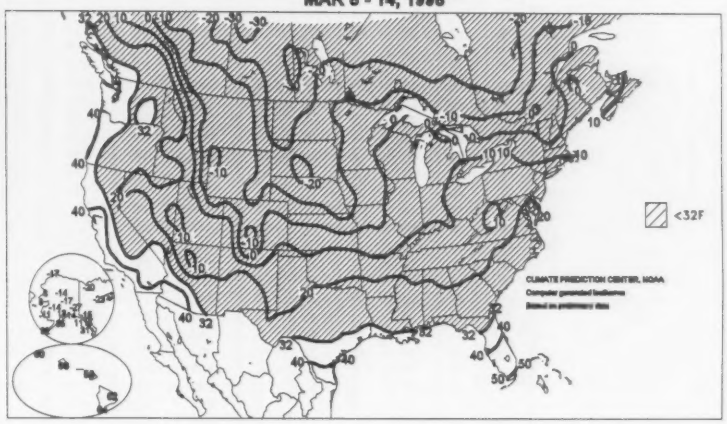


After blanketing the central Plains and Midwest with heavy snow and causing major flooding in the Southeast, a storm system (above) helps to draw the coldest air of the season into parts of the Central and Southeastern United States.

Extreme Maximum Temperature (°F)
MAR 8 - 14, 1998



Extreme Minimum Temperature (°F)
MAR 8 - 14, 1998



Total Number of Hourly Temperatures at or Below 24 Deg F
March 11 - 13, 1998

National Weather Data for Selected Cities

Weather Data for the Week Ending March 14, 1998

Data Provided by Climate Prediction Center (301-763-8000 EXT. 7511) and the Southern Regional Climate Center

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN, SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	63	31	71	19	42	-11	0.57	-0.86	0.57	4.14	148	20.72	164	82	47	0	4	1	0
	HUNTSVILLE	60	30	71	17	40	-11	0.30	-1.22	0.28	1.73	58	16.31	125	81	49	0	4	2	0
	MOBILE	68	34	74	27	46	-13	1.42	-0.07	1.42	10.13	341	31.33	238	77	36	0	3	1	1
	MONTGOMERY	66	33	71	24	44	-12	0.02	-1.44	0.02	1.32	46	15.22	116	79	43	0	4	1	0
AK	ANCHORAGE	37	19	42	13	28	4	0.00	-0.17	0.00	0.00	0	0.63	33	78	49	0	7	0	0
	BARROW	8	-7	13	-17	0	17	0.02	-0.01	0.02	0.02	33	0.02	7	86	78	0	7	1	0
	FAIRBANKS	29	-8	43	-17	10	2	0.00	-0.08	0.00	0.00	0	0.08	7	82	32	0	7	0	0
	JUNEAU	37	27	47	17	32	0	0.40	-0.36	0.15	0.40	26	4.83	49	86	70	0	5	4	0
	KODIAK	41	37	43	35	39	6	2.86	1.79	1.30	5.03	233	25.74	174	92	80	0	0	6	2
	NOME	31	18	40	8	25	17	0.02	-0.09	0.02	0.15	68	1.37	86	83	60	0	7	1	0
AZ	FLAGSTAFF	47	19	53	1	33	-1	0.35	-0.26	0.35	1.04	87	4.48	84	81	35	0	7	1	0
	PHOENIX	75	51	82	42	63	2	0.10	-0.12	0.10	0.11	25	3.39	188	63	20	0	0	1	0
	PRESCOTT	58	30	66	20	44	2	0.08	-0.36	0.08	0.52	59	3.34	86	70	24	0	4	1	0
	TUCSON	72	45	79	33	59	1	0.14	-0.03	0.14	0.22	67	3.58	190	61	20	0	0	1	0
	YUMA	77	55	84	45	66	2	0.00	-0.06	0.00	0.00	0	1.26	188	49	22	0	0	0	0
AR	FORT SMITH	47	28	61	19	37	-13	0.16	-0.72	0.10	1.27	75	12.08	196	81	54	0	5	2	0
	LITTLE ROCK	50	31	61	16	40	-11	0.34	-0.77	0.34	1.98	92	12.19	137	73	48	0	4	1	0
CA	BAKERSFIELD	67	45	78	39	56	-1	0.32	0.07	0.31	0.76	152	7.44	307	91	55	0	0	2	0
	EUREKA	60	44	71	35	52	3	1.64	0.38	1.56	2.16	105	28.91	220	100	70	0	0	3	1
	FRESNO	67	46	75	42	56	2	0.01	-0.43	0.01	0.47	53	8.67	187	93	47	0	0	1	0
	LOS ANGELES	71	51	78	49	61	3	0.68	0.19	0.37	1.03	101	18.09	306	84	52	0	0	2	0
	REDDING	66	42	79	33	54	2	0.95	-0.10	0.41	1.27	60	30.70	243	90	48	0	0	3	0
	SACRAM/MCCLELL	67	48	73	37	57	–	0.05	–	0.05	0.24	–	19.42	–	91	57	0	0	1	0
	SAN DIEGO	68	53	78	48	61	1	0.09	-0.32	0.08	0.31	37	10.85	254	72	41	0	0	2	0
	SAN FRANCISCO	64	49	70	45	57	4	0.16	-0.58	0.08	0.54	36	22.42	249	90	63	0	0	3	0
CO	ALAMOSA	46	10	55	-5	28	-3	0.00	-0.11	0.00	0.06	32	0.09	12	86	28	0	7	0	0
	CO SPRINGS	46	15	62	6	30	-6	0.00	-0.20	0.00	0.00	0	0.37	35	72	26	0	7	0	0
	DENVER	45	15	64	2	30	-8	0.00	-0.27	0.00	0.69	138	0.96	62	86	36	0	7	0	0
	GRAND JUNCTION	54	24	66	14	39	-3	0.00	-0.20	0.00	0.24	62	1.19	83	71	24	0	7	0	0
	PUEBLO	50	11	70	4	30	-10	0.00	-0.17	0.00	0.02	6	0.29	31	74	22	0	7	0	0
CT	BRIDGEPORT	41	27	57	16	34	-3	2.68	1.84	2.14	2.71	165	11.33	144	77	49	0	4	3	1
	HARTFORD	41	22	58	11	32	-4	2.90	2.09	2.40	3.05	192	9.54	116	81	51	0	6	2	2
DC	WASHINGTON	48	32	72	20	40	-6	1.66	0.94	0.88	2.37	166	13.01	169	80	42	0	4	2	2
DE	WILMINGTON	44	30	62	20	37	-4	1.44	0.67	0.94	2.35	155	10.09	135	81	34	0	4	2	2
FL	DAYTONA BEACH	64	45	86	37	55	-9	1.76	1.06	1.45	1.79	129	13.37	184	89	50	0	0	2	1
	JACKSONVILLE	63	39	84	31	51	-9	0.86	-0.02	0.80	1.37	78	15.97	178	85	42	0	4	2	1
	KEY WEST	71	61	82	56	66	-7	0.86	0.47	0.86	1.56	197	8.85	192	79	57	0	0	1	1
	MIAMI	73	56	83	49	65	-7	1.06	0.52	1.06	1.63	154	9.28	180	93	57	0	0	1	1
	ORLANDO	67	47	86	40	57	-9	2.30	1.53	2.30	2.47	157	13.20	192	90	41	0	0	1	1
	TAMPA	66	48	83	39	57	-9	0.83	0.08	0.83	0.91	59	16.37	249	80	46	0	0	1	1
	VALPARAISO/EGLIN	59	37	73	28	48	-9	0.24	-0.99	0.24	1.50	63	17.35	161	72	36	0	3	1	0
	WEST PALM BEACH	71	54	83	46	63	-7	1.43	0.58	1.43	2.34	140	19.74	276	83	57	0	0	1	1
GA	ATHENS	54	31	68	20	42	-10	3.08	1.81	3.08	4.53	181	18.11	157	80	41	0	4	2	1
	ATLANTA	51	30	66	19	41	-11	3.52	2.18	3.52	6.06	229	19.06	156	75	47	0	4	1	1
	AUGUSTA	57	33	71	20	45	-9	3.19	2.10	3.14	5.30	244	19.17	183	78	39	0	4	2	1
	COLUMBUS	56	34	67	25	45	-11	2.86	1.52	2.86	4.24	161	11.67	97	70	40	0	5	1	1
	MACON	56	33	68	23	45	-11	1.81	0.69	1.81	3.41	152	15.35	133	81	42	0	5	1	1
	SAVANNAH	58	36	69	24	47	-11	1.54	0.66	1.54	2.34	135	16.73	195	88	40	0	4	1	1
HI	HILO	84	64	86	62	74	2	0.05	-2.98	0.04	0.81	14	3.26	13	81	52	0	0	2	0
	HONOLULU	83	67	87	66	75	1	0.00	-0.52	0.00	0.00	0	0.98	14	83	55	0	0	0	0
	KAHULUI	86	62	89	58	74	1	0.00	-0.63	0.00	0.00	0	0.86	10	81	48	0	0	0	0
	LIHUE	79	64	80	60	72	-1	0.00	-0.94	0.00	0.00	0	3.94	36	87	64	0	0	0	0
ID	BOISE	58	35	69	26	47	5	0.04	-0.25	0.02	0.47	84	4.61	150	77	34	0	2	2	0
	LEWISTON	59	40	67	33	49	6	0.08	-0.17	0.04	1.13	240	3.23	121	80	47	0	0	2	0
	POCATELLO	49	25	60	14	37	2	0.01	-0.27	0.01	0.29	54	3.71	148	89	44	0	6	1	0
IL	CHICAGO/OHARE	32	18	39	10	25	-10	2.78	2.22	1.97	2.93	282	7.30	186	77	54	0	6	3	2
	MOLINE	31	17	44	7	24	-11	1.04	0.41	1.04	1.23	106	6.92	176	80	56	0	6	1	1
	PEORIA	31	16	42	3	23	-13	1.72	1.11	1.38	1.79	157	6.98	171	85	58	0	6	2	1
	ROCKFORD	31	17	41	7	24	-9	0.91	0.41	0.89	1.07	115	5.00	148	73	44	0	6	2	1
	SPRINGFIELD	33	17	48	-1	25	-13	1.27	0.57	1.14	1.39	105	6.52	141	82	60	0	6	2	1
IN	EVANSVILLE	43	24	69	11	34	-11	0.56	-0.48	0.43	0.78	38	5.74	73	85	55	0	6	2	0
	FORT WAYNE	37	19	53	11	28	-7	1.76	1.13	1.34	1.90	158	7.30	147	85	59	0	6	2	1
	INDIANAPOLIS	39	20	58	8	29	-10	1.18	0.34	0.94	1.46	90	5.21	82	83	63	0	6	2	1
	SOUTH BEND	31	19	42	10	25	-11	1.60	0.94	0.94	1.71	137	7.21	134	86	62	0	6	5	1
IA	BURLINGTON	32	17	46	2	25	-12	1.60	1.00	1.44	1.68	153	7.06	202	77	54	0	6	2	1
	CEDAR RAPIDS	25	12	39	-4	19	-15	0.80	0.32	0.80	0.94	107	4.25	146	86	64	0	7	1	1
	DES MOINES	24	7	41	-8	16	-19	1.08	0.60	1.08	1.27	144	3.84	130	86	64	0	7	1	0
	DUBUQUE	29	13	37	-1	21	-11	0.77	0.16	0.75	1.02	90	5.00	135	81	57	0	7	2	1
	SIOUX CITY	22	2	44	-14	12	-22	–	–	–	0.71	91	1.99	98	83	63	0	7	-	-
	WATERLOO	26	10	42	-5	18	-14	0.36	-0.12	0.34	0.53	60	3.18	115	82	64	0	7	2	0
KS	CONCORDIA	28	9	53	-5	19	-21	0.09	-0.39	0.08	0.32	36	2.89	121	81	60	0	7	2	0
	DODGE CITY	38	13	67	2	25	-16	0.28	-0.05	0.28	0.71	116	1.79	104	86	59	0	7	1	0
	GOODLAND	42	13	68	-1	27	-10	0.00	-0.26	0.00	0.10	20	0.85	67	76	39	0	7	0	0
	TOPEKA	30	10	54	-6	20	-21	0.40	-0.12	0.38	1.09	111	2.65	89	83	58	0	7	2	0

Based on 1961-90 normals

Weather Data for the Week Ending March 14, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN, SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	37	17	66	9	27	-17	0.07	-0.47	0.06	0.45	45	1.80	65	81	47	0	7	2	0
KY	JACKSON	44	26	71	11	34	-11	0.92	-0.17	0.54	1.33	82	9.51	98	81	48	0	6	4	1
	LEXINGTON	42	23	70	9	33	-11	1.15	0.15	0.94	1.44	74	8.01	100	84	52	0	6	2	1
	LOUISVILLE	44	26	74	10	35	-9	1.18	0.13	–	1.39	87	9.85	117	79	49	0	6	-	-
	PADUCAH	43	24	63	12	34	-12	0.23	-0.86	0.17	0.79	37	8.61	92	84	54	0	5	3	0
LA	BATON ROUGE	58	36	68	28	47	-13	0.00	-1.08	0.00	1.70	78	22.24	176	79	36	0	2	0	0
	LAKE CHARLES	59	39	67	34	49	-10	0.28	-0.47	0.21	2.05	135	17.19	179	79	44	0	0	3	0
	NEW ORLEANS	59	40	73	34	49	-11	0.04	-1.10	0.04	3.30	141	26.85	200	72	41	0	0	1	0
	SHREVEPORT	52	34	60	27	43	-13	0.15	-0.67	0.06	0.17	10	13.20	139	75	44	0	3	3	0
ME	CARIBOU	31	12	47	-2	22	-1	1.48	0.94	1.18	1.92	181	8.60	159	87	57	0	7	5	1
	PORTLAND	39	19	58	4	29	-2	2.40	1.59	1.53	2.42	152	12.97	153	79	50	0	6	3	2
MD	BALTIMORE	47	31	73	17	39	-4	3.74	2.97	2.87	4.59	298	16.65	215	70	41	0	4	2	2
MA	BOSTON	41	24	58	10	32	-5	2.37	1.54	2.14	2.43	147	12.73	144	78	52	0	6	3	1
	WORCESTER	35	19	57	7	27	-5	4.08	3.20	3.73	4.21	242	11.98	135	80	53	0	6	3	1
MI	ALPENA	28	14	36	2	21	-5	1.71	1.25	0.54	2.11	240	6.66	175	89	64	0	7	6	1
	GRAND RAPIDS	30	16	36	2	23	-9	2.72	2.17	1.35	2.87	276	8.50	198	88	61	0	6	4	2
	HOUGHTON LAKE	27	14	35	0	20	-6	1.14	0.70	0.71	1.39	167	4.39	126	90	61	0	7	5	1
	LANSING	30	14	37	3	22	-10	1.61	1.12	1.00	2.05	220	7.54	200	89	64	0	7	3	2
	MARQUETTE	23	9	31	-2	16	-5	1.41	0.78	0.53	2.44	205	6.29	124	90	53	0	7	6	0
	MUSKEGON	30	20	36	5	25	-7	1.18	0.62	0.52	1.33	130	5.67	117	86	62	0	6	5	1
MN	DULUTH	22	3	31	-6	13	-10	0.00	-0.41	0.00	0.18	24	4.63	167	82	46	0	7	0	0
	INT'L FALLS	21	0	30	-8	10	-9	0.07	-0.16	0.04	0.19	46	1.90	98	82	40	0	7	3	0
	MINNEAPOLIS	28	10	37	2	19	-9	0.04	-0.37	0.04	0.23	30	2.66	102	72	38	0	7	1	0
	ROCHESTER	23	8	36	-3	16	-12	0.03	-0.33	0.03	0.16	22	3.00	137	79	58	0	7	1	0
	ST. CLOUD	26	6	36	-2	16	-9	0.00	-0.28	0.00	0.30	58	1.87	99	75	42	0	7	0	0
MS	JACKSON	52	32	67	23	42	-13	0.00	-1.30	0.00	2.39	94	17.43	140	76	39	0	5	0	0
	MERIDIAN	54	31	69	22	43	-13	0.00	-1.54	0.00	2.31	76	21.29	156	79	38	0	4	0	0
	TUPELO	48	29	64	18	38	-14	0.16	-1.22	0.16	3.39	126	15.57	126	79	43	0	5	1	0
MO	COLUMBIA	34	16	55	-1	25	-16	0.90	0.21	0.78	1.61	124	7.32	159	83	56	0	7	3	1
	KANSAS CITY	31	13	52	-7	22	-19	0.51	-0.03	0.47	1.38	137	3.44	107	79	60	0	7	2	0
	SAINT LOUIS	39	20	58	4	29	-14	1.04	0.24	0.86	1.49	98	7.30	134	84	58	0	6	3	1
	SPRINGFIELD	37	19	60	6	28	-16	0.44	-0.41	0.40	1.48	92	8.43	161	87	57	0	6	3	0
MT	BILLINGS	35	12	62	-5	23	-11	0.06	-0.18	0.04	0.48	107	1.28	63	92	61	0	7	2	0
	BUTTE	44	12	56	-8	29	2	0.04	-0.13	0.04	0.51	166	1.81	148	90	50	0	7	1	0
	GLASGOW	24	3	47	-11	13	-14	0.06	-0.01	–	0.12	86	0.53	68	81	54	0	7	-	-
	GREAT FALLS	37	17	60	3	27	-5	0.06	-0.18	0.06	0.41	93	1.58	82	88	64	0	7	1	0
	KALISPELL	45	25	57	12	35	3	0.42	0.20	0.20	1.36	302	2.68	87	96	59	0	7	5	0
	MILES CITY	26	3	42	-12	14	-17	0.04	-0.07	0.04	0.18	82	0.81	66	88	63	0	7	1	0
	MISSOULA	50	28	60	20	39	4	0.02	-0.20	0.02	0.46	102	2.22	89	88	45	0	5	1	0
NE	GRAND ISLAND	25	4	55	-10	15	-21	0.01	-0.39	0.01	0.10	14	0.97	50	82	57	0	7	1	0
	LINCOLN	25	3	49	-15	14	-23	0.60	0.16	0.59	1.57	194	3.56	173	86	60	0	7	2	1
	NORFOLK	22	2	45	-14	12	-21	0.05	-0.35	0.02	0.56	76	1.07	53	82	58	0	7	3	0
	NORTH PLATTE	34	6	61	-12	20	-15	0.00	-0.24	0.00	0.19	43	0.86	69	86	50	0	7	0	0
	OMAHA	24	4	44	-11	14	-22	0.64	0.20	–	1.57	194	3.17	137	83	61	0	7	-	-
	SCOTTSBLUFF	40	8	59	-4	24	-11	0.00	-0.23	0.00	0.59	137	1.43	104	87	51	0	7	0	0
	VALENTINE	25	1	43	-27	13	-19	0.00	-0.21	0.00	0.31	79	0.50	46	87	60	0	7	0	0
NV	ELY	47	17	55	3	32	-2	0.00	-0.22	0.00	0.11	27	2.22	123	85	36	0	7	0	0
	LAS VEGAS	67	45	74	37	56	1	0.14	0.03	0.14	0.14	64	3.20	278	61	22	0	0	1	0
	RENO	59	30	65	23	45	3	0.05	-0.12	0.05	0.57	154	4.25	173	83	27	0	5	1	0
	WINNEMUCCA	59	27	68	18	43	4	0.00	-0.17	0.00	0.15	45	3.42	201	82	31	0	6	0	0
NH	CONCORD	36	18	50	3	27	-3	2.19	1.58	1.85	2.38	197	8.47	135	72	44	0	6	3	1
NJ	NEWARK	43	29	60	19	36	-4	1.78	0.91	1.13	1.84	109	11.54	142	74	48	0	5	3	2
NM	ALBUQUERQUE	57	33	65	27	45	-1	0.13	0.02	0.13	0.24	109	1.04	90	48	19	0	3	1	0
NY	ALBANY	37	20	57	6	28	-4	1.37	0.72	0.80	1.56	122	7.94	134	85	54	0	6	3	2
	BINGHAMTON	32	18	57	7	25	-6	1.53	0.91	0.70	1.67	137	9.26	156	90	59	0	6	5	1
	BUFFALO	34	21	58	10	27	-5	1.61	1.02	0.80	1.86	158	9.73	157	85	56	0	7	7	2
	ROCHESTER	35	21	63	12	28	-4	1.28	0.79	0.61	1.10	111	9.07	175	88	53	0	6	7	0
	SYRACUSE	37	20	63	9	28	-4	1.23	0.63	0.49	1.38	119	9.30	165	89	57	0	6	6	0
NC	ASHEVILLE	46	24	64	14	35	-11	1.53	0.48	1.46	1.83	86	18.19	196	85	44	0	6	2	1
	CHARLOTTE	56	33	71	21	44	-5	1.57	0.52	1.43	2.15	103	11.71	121	72	34	0	4	3	1
	GREENSBORO	51	30	66	17	41	-7	1.84	0.99	1.70	1.99	116	13.26	162	70	39	0	4	2	1
	HATTERAS	49	38	62	29	43	-7	0.50	-0.49	0.40	0.57	29	18.03	158	79	56	0	4	2	0
	RALEIGH	54	32	68	20	43	-6	2.39	1.50	1.85	2.51	139	15.79	176	88	39	0	5	2	2
	WILMINGTON	58	35	73	21	46	-7	0.76	-0.15	0.41	0.84	46	19.36	206	81	38	0	4	2	0
ND	BISMARCK	17	-3	33	-15	7	-19	0.00	-0.15	0.00	0.12	48	1.88	161	82	63	0	7	0	0
	DICKINSON	17	-7	37	-26	6	-23	0.04	-0.08	0.04	0.17	77	2.56	275	85	68	0	7	1	0
	FARGO	16	1	30	-7	8	-15	0.00	-0.21	0.00	0.06	16	2.36	154	80	62	0	7	0	0
	GRAND FORKS	14	-2	28	-10	6	-15	0.00	-0.20	0.00	0.00	0	1.94	124	81	63	0	7	0	0
	JAMESTOWN	17	-3	33	-12	7	-17	0.05	-0.12	0.03	0.20	63	2.20	158	92	67	0	7	2	0
	WILLISTON	15	-11	34	-28	2	-24	0.00	-0.14	0.00	0.20	80	2.31	188	86	62	0	7	0	0
OH	AKRON-CANTON	35	20	52	12	27	-9	1.32	0.58	0.75	1.62	112	7.83	134	88	57	0	6	5	1
	CINCINNATI	41	21	68	7	31	-10	1.26	0.31	0.79	1.62	88	7.93	112	87	59	0	6	3	1
	CLEVELAND	36	23	53	17	30	-6	0.84	0.20	0.44	1.43	114	7.25	132	85	58	0	6	5	0
	COLUMBUS	40	24	61	16	32	-7	0.82	0.09	0.43	0.92	65	5.69	98	81	49	0	6	4	0
	DAYTON	39	21	61	12	30	-9	0.88	0.12	0.49	1.07	74	6.69	117	82	58	0	6	2	0
	MANSFIELD	35	20	54	12	27	-8	0.55	-0.17	0.34	0.83	60	6.29	117	86	63	0	6	3	0

Based on 1961-90 normals

Weather Data for the Week Ending March 14, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	37	21	53	14	29	-5	1.59	1.01	0.90	1.63	147	8.37	183	87	57	0	6	2	2
	YOUNGSTOWN	35	21	56	13	28	-6	1.23	0.54	0.49	1.80	120	8.34	151	87	57	0	6	7	0
OK	OKLAHOMA CITY	44	25	61	16	34	-15	0.02	-0.59	0.02	1.22	104	5.42	141	78	52	0	6	1	0
	TULSA	43	23	64	14	33	-16	0.00	-0.76	0.00	2.74	188	6.52	132	81	47	0	6	0	0
OR	ASTORIA	55	45	61	40	50	4	3.01	1.34	1.66	5.42	161	32.14	153	98	82	0	0	7	2
	BURNS	54	25	61	23	41	6	0.18	-0.08	0.17	0.48	102	5.70	257	95	45	0	7	2	0
	EUGENE	59	42	71	33	51	4	0.49	-0.82	0.17	1.55	59	15.84	98	89	63	0	0	6	0
	MEDFORD	61	38	69	33	50	3	0.09	-0.34	0.05	0.72	83	8.78	160	91	50	0	0	3	0
	PENDLETON	62	40	67	38	51	7	0.08	-0.20	0.06	0.61	113	4.40	138	91	47	0	0	3	0
	PORTLAND	58	46	64	41	52	5	0.67	-0.16	0.41	1.89	112	13.93	128	91	64	0	0	5	0
	SALEM	58	43	66	33	51	6	0.75	-0.24	0.18	1.87	93	17.09	137	96	69	0	0	7	0
PA	ALLENTOWN	43	27	62	17	35	-3	1.97	1.24	1.37	2.11	146	9.38	124	76	46	0	5	3	2
	ERIE	36	24	61	18	30	-4	0.42	-0.24	0.20	0.78	61	7.41	128	87	63	0	7	3	0
	MIDDLETOWN	43	29	66	19	36	-3	1.43	0.66	0.96	2.16	140	11.70	160	68	44	0	4	2	1
	PHILADELPHIA	46	30	67	20	38	-3	1.13	0.37	0.92	1.77	118	9.26	123	72	49	0	5	2	1
	PITTSBURGH	38	23	58	12	30	-7	0.72	-0.04	0.48	0.93	63	7.12	111	86	48	0	6	4	0
	SCRANTON	39	25	63	14	32	-3	1.07	0.51	0.80	1.20	107	7.07	132	86	48	0	5	4	1
	WILLIAMSPORT	39	25	60	16	32	-4	1.25	0.53	0.66	1.32	94	11.86	177	79	45	0	5	3	2
RI	PROVIDENCE	43	25	58	14	34	-2	3.52	2.61	3.02	3.68	208	16.06	173	80	49	0	5	3	2
SC	BEAUFORT	58	37	71	24	48	-10	1.71	0.75	1.67	2.08	109	18.31	208	83	41	0	4	2	1
	CHARLESTON	59	37	74	22	48	-9	1.87	0.86	1.65	2.36	117	20.10	230	84	38	0	3	2	1
	COLUMBIA	56	33	70	20	45	-9	1.97	0.84	1.94	2.50	112	15.86	145	82	40	0	4	2	1
	GREENVILLE	53	30	68	19	42	-9	2.44	1.19	2.40	3.20	129	16.91	154	74	40	0	4	2	1
SD	ABERDEEN	18	-3	35	-14	8	-21	0.00	-0.27	0.00	0.14	28	1.53	115	82	65	0	7	0	0
	HURON	18	-2	38	-17	8	-21	0.01	-0.34	0.01	0.15	23	1.10	84	80	61	0	7	1	0
	RAPID CITY	28	3	48	-18	15	-17	0.00	-0.20	0.00	0.30	79	0.94	74	86	70	0	7	0	0
	SIOUX FALLS	18	1	37	-11	10	-21	0.02	-0.31	0.02	0.54	89	1.70	97	82	62	0	7	1	0
TN	BRISTOL	46	25	66	13	36	-10	1.04	0.19	0.59	1.32	78	8.58	103	83	44	0	6	2	1
	CHATTANOOGA	51	30	69	19	41	-8	1.59	0.19	1.57	3.81	136	16.37	131	72	45	0	5	2	1
	KNOXVILLE	49	29	73	16	39	-8	1.31	0.13	1.25	1.60	69	8.93	86	79	44	0	4	2	1
	MEMPHIS	46	30	63	18	38	-13	0.29	-0.91	0.28	2.67	113	14.96	143	73	50	0	5	2	0
	NASHVILLE	47	28	73	15	38	-11	0.46	-0.64	0.36	1.25	58	9.04	96	81	48	0	5	3	0
TX	ABILENE	52	31	63	22	42	-13	0.20	-0.10	0.16	0.58	102	2.43	88	83	46	0	5	2	0
	AMARILLO	48	22	72	14	35	-10	0.03	-0.19	0.02	0.11	26	2.87	186	83	37	0	6	2	0
	AUSTIN	56	40	63	32	48	-12	0.46	0.05	0.20	0.57	67	6.50	138	71	46	0	1	4	0
	BEAUMONT	58	41	66	36	50	-10	0.38	-0.36	0.36	3.08	207	16.94	176	76	46	0	0	2	0
	BROWNSVILLE	67	54	72	45	60	-7	0.29	0.20	0.19	0.34	148	2.43	86	84	53	0	0	2	0
	CORPUS CHRISTI	63	49	71	40	56	-8	1.83	1.62	0.89	1.86	402	5.56	135	83	56	0	0	4	2
	DEL RIO	59	43	65	36	51	-11	0.04	-0.06	0.04	0.07	29	0.46	26	85	38	0	0	1	0
	EL PASO	64	33	75	27	48	-5	0.01	-0.06	0.01	0.05	31	0.24	24	62	28	0	5	1	0
	FORT WORTH	50	34	57	24	42	-13	0.58	-0.02	0.51	1.02	67	9.31	179	74	46	0	3	3	1
	GALVESTON	58	46	66	39	52	-8	0.03	-0.53	0.03	0.11	10	10.56	160	83	54	0	0	1	0
	HOUSTON	59	39	66	30	49	-10	0.50	-0.16	0.33	0.53	40	10.74	142	81	47	0	1	4	0
	LUBBOCK	50	26	67	14	38	-12	0.09	-0.10	0.09	0.13	33	1.99	137	78	36	0	6	1	0
	MIDLAND	57	32	70	20	45	-10	0.00	-0.14	0.00	0.02	7	0.76	59	72	32	0	4	0	0
	SAN ANGELO	57	33	69	24	45	-11	0.08	-0.11	0.08	0.13	33	1.36	80	78	36	0	5	1	0
	SAN ANTONIO	57	41	63	32	49	-11	1.01	0.68	0.60	1.10	167	7.71	184	76	46	0	1	3	1
	VICTORIA	56	42	67	32	50	-12	0.75	0.42	0.50	0.78	113	5.78	119	85	53	0	1	3	1
	WACO	53	35	61	26	44	-13	0.39	-0.11	0.35	0.42	42	10.58	224	79	48	0	4	2	0
	WICHITA FALLS	48	29	63	20	39	-13	0.03	-0.44	0.03	0.16	18	4.92	145	76	52	0	5	1	0
UT	SALT LAKE CITY	47	29	57	14	38	-2	0.00	-0.42	0.00	1.09	136	7.81	241	75	46	0	4	0	0
VT	BURLINGTON	33	16	53	0	25	-4	1.64	1.16	0.96	2.07	223	9.06	207	86	51	0	6	4	1
VA	LYNCHBURG	47	27	67	11	37	-8	1.95	1.15	1.41	2.61	166	16.54	222	68	40	0	5	2	2
	NORFOLK	54	37	73	25	45	-2	1.60	0.75	0.89	1.76	103	15.98	179	89	44	0	3	2	2
	RICHMOND	53	32	74	19	43	-4	2.64	1.81	1.80	3.01	182	15.63	194	88	29	0	4	2	2
	ROANOKE	46	28	63	15	37	-8	1.11	0.31	0.79	1.15	73	17.11	237	66	43	0	4	2	1
	WASHDULLES	47	25	73	16	36	-4	1.24	0.52	0.76	1.81	127	13.06	186	70	42	0	4	2	1
WA	HANFORD	62	39	72	33	51	--	0.01	-0.13	0.01	0.14	61	2.53	154	77	45	0	0	1	0
	OLYMPIA	56	41	63	36	48	5	1.62	0.45	1.03	2.86	120	19.89	123	98	72	0	0	5	1
	QUILLAYUTE	53	45	59	40	49	6	3.08	0.37	1.22	3.73	68	34.87	107	97	85	0	0	7	3
	SEATTLE-TACOMA	56	45	66	40	50	5	1.09	0.26	0.72	2.10	124	12.55	113	93	67	0	0	4	1
	SPOKANE	52	36	65	31	44	6	0.28	-0.07	0.14	0.59	84	4.24	102	92	57	0	2	2	0
	YAKIMA	59	35	68	31	47	5	0.01	-0.13	0.01	0.14	42	3.94	173	91	52	0	2	1	0
WV	BECKLEY	39	20	59	8	30	-11	0.76	-0.01	0.34	1.15	76	10.93	148	87	57	0	6	4	0
	CHARLESTON	45	26	67	13	35	-9	1.01	0.18	0.51	1.56	95	9.22	122	86	54	0	6	4	1
	ELKINS	38	22	60	5	30	-8	0.62	-0.23	0.37	0.85	61	7.86	99	83	54	0	6	5	0
	HUNTINGTON	43	26	70	14	35	-10	0.77	-0.06	0.43	1.15	71	9.76	133	83	46	0	6	3	0
WI	EAU CLAIRE	28	12	36	3	20	-7	0.12	-0.22	0.09	0.52	84	4.46	191	79	49	0	7	2	0
	GREEN BAY	29	14	34	6	21	-6	0.35	-0.09	0.25	0.73	89	3.73	124	79	51	0	7	2	0
	MADISON	27	13	37	4	20	-10	0.68	0.22	0.68	1.08	127	4.76	158	76	50	0	7	1	1
	MILWAUKEE	30	17	36	10	24	-8	0.75	0.19	0.69	0.92	88	6.70	184	74	50	0	6	3	1
WY	CASPER	41	12	58	-1	26	-6	0.00	-0.19	0.00	0.04	11	1.09	73	83	49	0	7	0	0
	CHEYENNE	41	12	58	0	26	-6	0.03	-0.19	0.02	0.20	50	0.57	48	87	41	0	7	2	0
	LANDER	37	11	53	-5	24	-8	0.00	-0.23	0.00	0.09	22	0.80	54	86	54	0	7	0	0
	SHERIDAN	37	10	60	-6	23	-9	0.00	-0.19	0.00	0.17	47	0.67	36	87	57	0	7	0	0

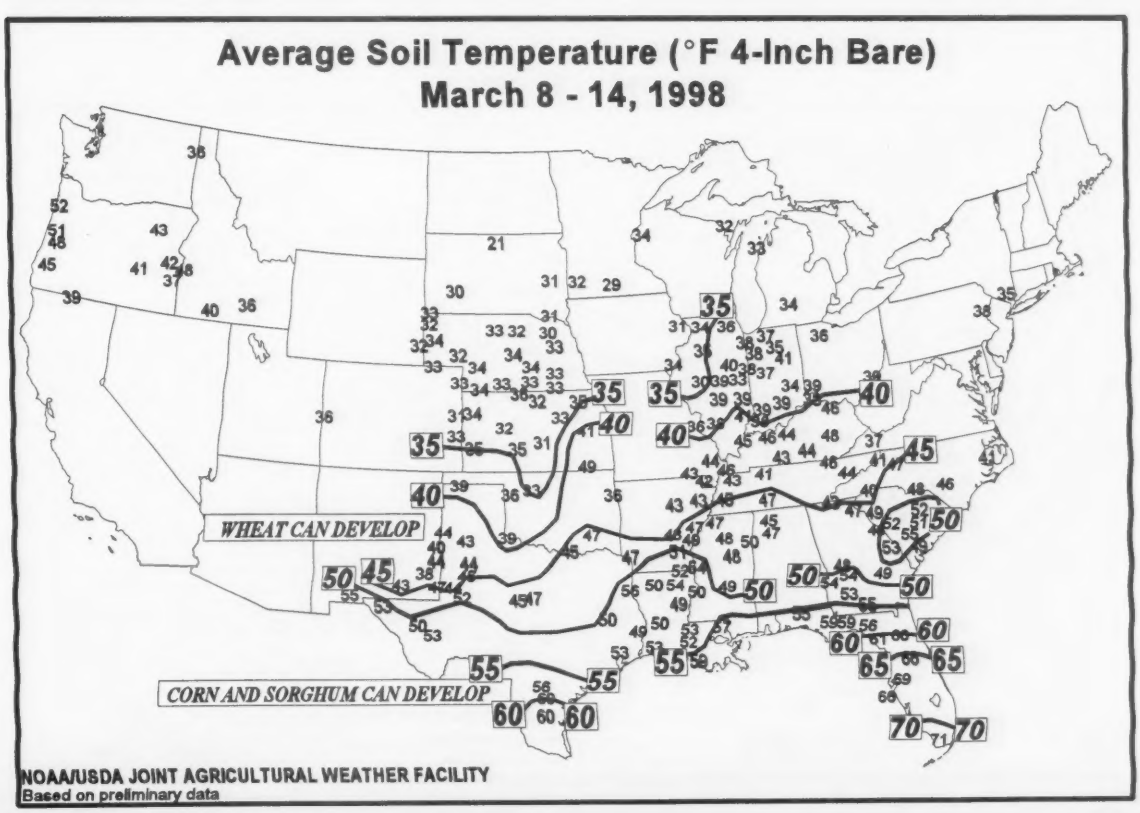
NOTE: These data are preliminary and subject to change. In the past, precipitation totals from a number of stations have been incomplete.

National Agricultural Summary

March 9 - 15, 1998

HIGHLIGHTS

A strong cold front brought sub-freezing temperatures as far south as central Texas and the Gulf of Mexico, damaging fruit and nut trees and slowing the growth of winter wheat, vegetables, and early-planted field crops. The peach crop in Georgia, the Carolinas, and Texas suffered considerable freeze damage to early-blooming varieties and young trees. Blueberry, strawberry, and pecan growers also reported damage caused by freezing temperatures. In southern Florida, temperatures remained warm enough to prevent damage to the vegetable and citrus crops. Field activities were sharply curtailed throughout the Southeast due to the cold weather and wet fields. The Corn Belt and Great Plains States experienced bitterly cold weather early in the week, but the winter wheat crop did not suffer significant damage. Snow cover helped protect the crop in the northern Great Plains. Leaf burn was reported throughout the central and southern Plains, but wind and freeze damage was expected to be light. In Texas, emerged corn was damaged by strong winds. Fieldwork was limited in the central Plains by cold, wet weather, but Texas farmers continued planting corn, cotton, and grain sorghum and began planting rice. Temperatures were above normal in California and the Pacific Northwest. The warm, sunny weather aided the progress of California's spring vegetables and helped dry out orchards and vineyards. Almond and stone fruit trees were near full bloom. Fieldwork resumed in most areas until showers later in the week halted activity in some northern locations. Plants in some low-lying small grain and alfalfa fields continued to recover from excessive moisture, but still showed signs of stress.


Average Soil Temperature (°F 4-Inch Bare)
March 8 - 14, 1998
WHEAT CAN DEVELOP
CORN AND SORGHUM CAN DEVELOP
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary data

Winter Weather Review

Highlights: El Niño had a profound influence on the Nation's weather patterns during the winter months. The two most consistent effects were warmth in the North, especially from the upper Midwest into the Northeast; and wetness in the Southeast, continuing a trend that developed in mid-October. Despite the consistently above-normal temperatures in many areas, the winter featured a catastrophic ice storm in northern New England (January 5-9) and a blizzard on parts of the northern Plains (February 25-March 1). Another persistent weather feature was heavy rainfall in California, especially in early December and for a month-long period ending in late February. The California rainfall resulted in the wettest February on record in many locations, inducing flooding, mudslides, and agricultural disruptions (fieldwork delays and crop damage). Along the East Coast, several "nor'easters" delivered high winds, torrential precipitation, and heavy surf. Two such storms--a week apart in late January and early February--dumped record snowfall in the Ohio Valley and central Appalachians. On the night of February 22-23, another low-pressure system sparked Florida's deadliest tornado outbreak on record, leaving 38 people dead.

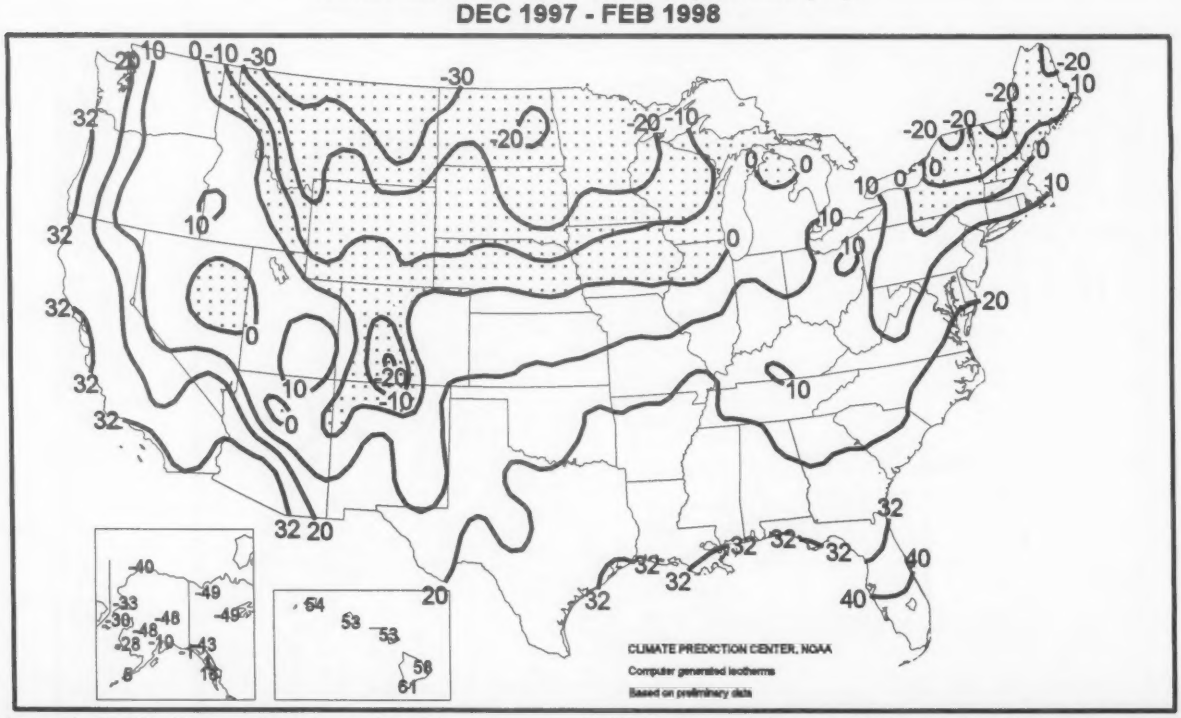
Winter temperatures averaged 4 to 12°F above normal from the northern Plains to the Northeast. Departures generally ranged from +2 to +5 in the Northwest and 0 to +4 from the central and southern Plains into the Southeast. Near-normal readings prevailed in California and the Southwest, highlighted by very cool weather along the primary storm track in December and February. Winter precipitation totaled more than 200 percent of normal across southern Arizona and most of California; on parts of the central and southern Plains; and in portions of the Mid- and Southern Atlantic States.

December: Monthly temperatures ranged from 5 to 15°F above normal across the North Central States, but were as much as 3°F below normal in the Southeast. Heavy snowfall suppressed temperatures in the southern Rockies and southern Plains, where departures ranged from -2 to -9°F. Despite the lack of Arctic air, the passage of several strong storms lowered temperatures across the Deep South. On December 13-14 and again toward month's end, temperatures dipped to near-freezing levels as far south as Texas' Lower Rio Grande Valley. December-record rainfall drenched central and northeastern Florida, while near-record totals soaked parts of Texas. Snow occasionally fell across the South, including up to 8 inches in Mississippi on December 14, and as much as 4 feet in the mountains of the Southwest after mid-month. After early- to mid-month rainfall, California's weather pattern turned quiet.

January: Arctic air briefly edged into the North before mid-month, but quickly lost its punch. As a result, monthly temperatures averaged 3 to 12°F above normal, except on the northern Plains and across parts of the West Coast States (near normal). From January 5-9, one of the worst ice storms on record struck northern New England. During the same period, heavy rain fell in the Southeast, contributing to January-record rainfall in more than a dozen locations from Louisiana to Virginia. From January 27-28, an East Coast storm padded rainfall totals and dumped heavy snow in the central and southern Appalachians. Above-normal precipitation also occurred in the Northwest.

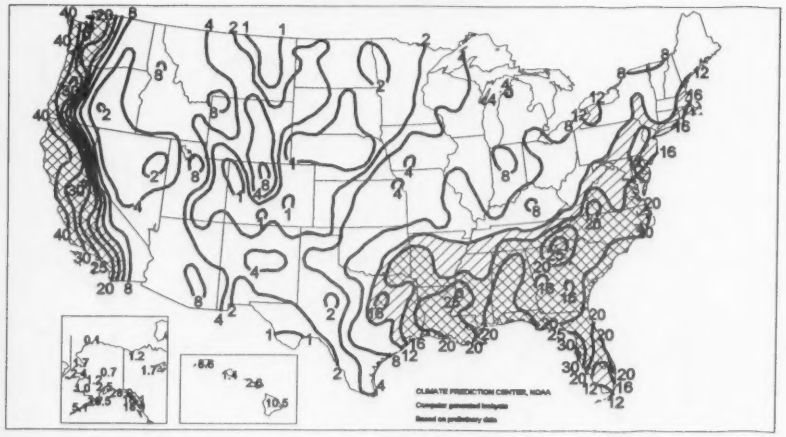
February: A complete summary appeared in last week's *Bulletin*.

Winter Extreme Minimum Temperature (°F)
DEC 1997 - FEB 1998

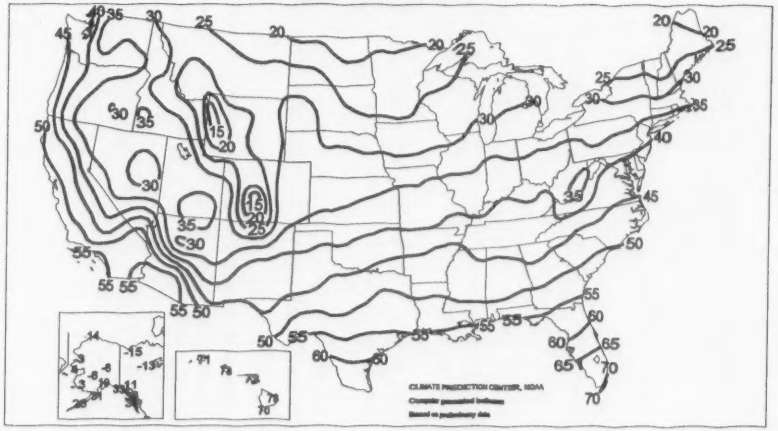


In several parts of the Nation, winter's extreme minimum temperatures remained higher than ever before recorded. For example, cold-season lows of 5°F in Goodland, KS and 16°F in Springfield, MO--if they had stood through the Arctic outbreak of March 10-13--would have broken records set in 1982-83. For the first time in 58 years of airport records, winter lows failed to dip below 0°F in Portland, ME, breaking their 1952-53 record of 1 day. In Illinois, cold-season readings remained at or above 0°F at Peoria for the first time since 1952-53. In Milwaukee, WI, the winter ended with 45 consecutive days of above-normal temperatures, approaching their 1878 record of 54 days.

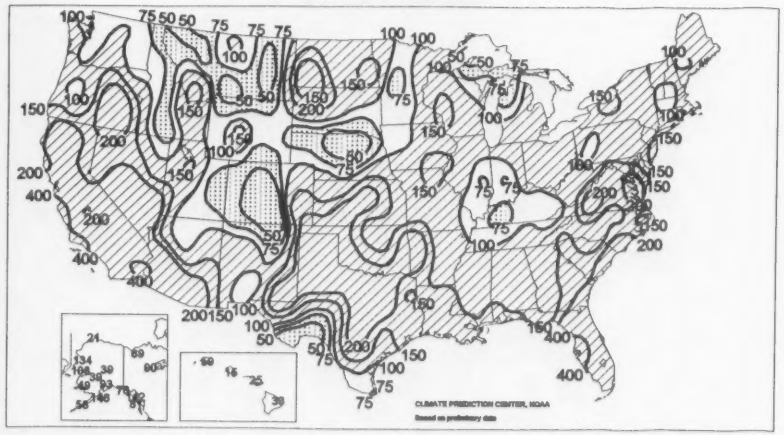
Winter Total Precipitation (Inches)
DEC 1997 - FEB 1998



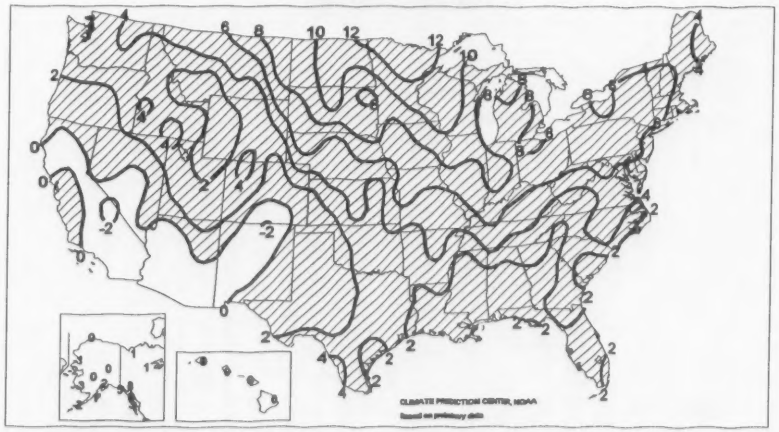
Winter Average Temperature (°F)
DEC 1997 - FEB 1998



Winter Percent of Normal Precipitation
DEC 1997 - FEB 1998



Winter Departure from Normal Average Temperature (°F)
DEC 1997 - FEB 1998



International Weather and Crop Summary

March 8 - 14, 1998

HIGHLIGHTS

FSU-WESTERN: A cooling trend was accompanied by widespread rain and snow in most winter grain areas.

EUROPE: Unseasonably cool, showery weather in most areas slowed winter grain development and early-spring fieldwork.

NORTHWESTERN AFRICA: The fifth consecutive week of dryness in Morocco stressed winter grains, in or nearing the heading stage.

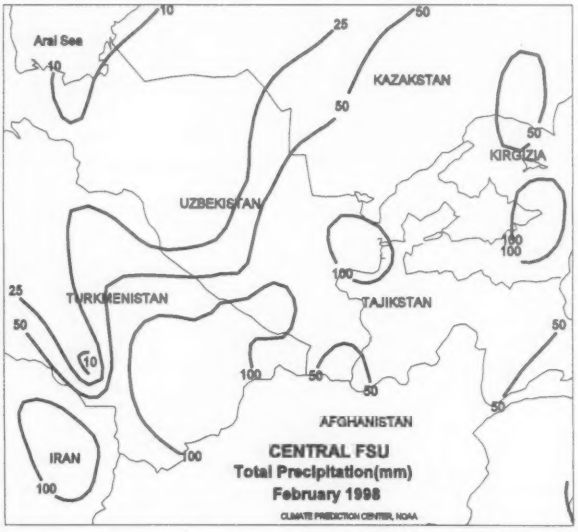
AUSTRALIA: Continued dryness in the east favored mature summer crops, while in the southwest, autumn rains covered primary agricultural areas.

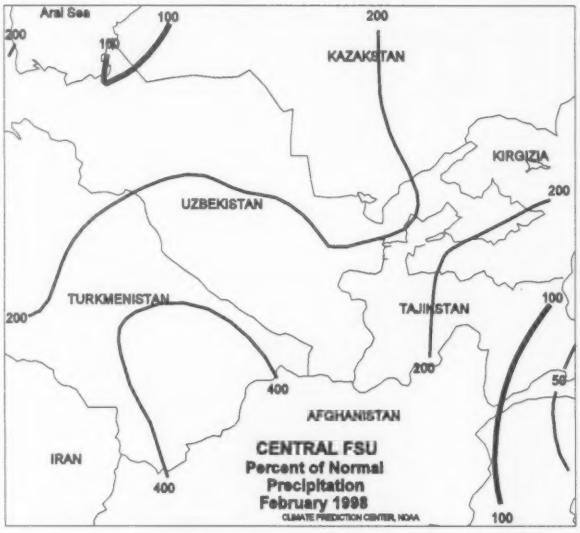
SOUTH AFRICA: Showery, cooler weather slowed development of corn and other summer crops.

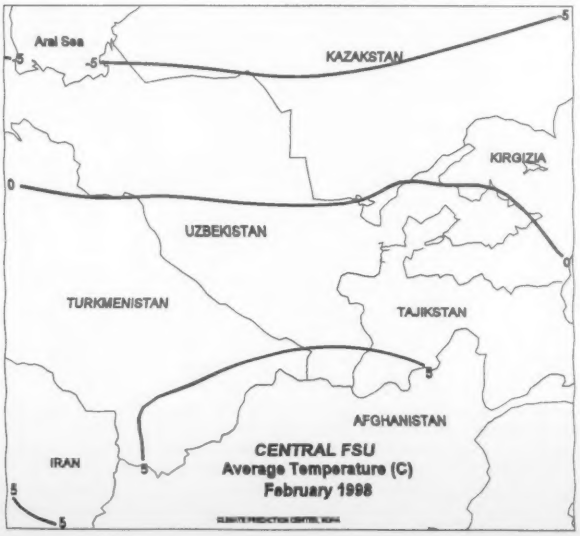
SOUTHEAST ASIA: Showers continued to reduce long-term moisture deficits in Java, but drought continued across the eastern Philippines and eastern Malaysia.

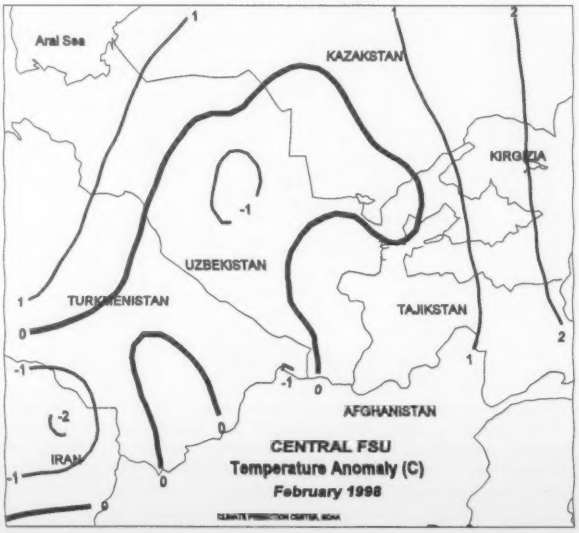
EASTERN ASIA: Timely rain benefited greening winter wheat across most of the North China Plain.

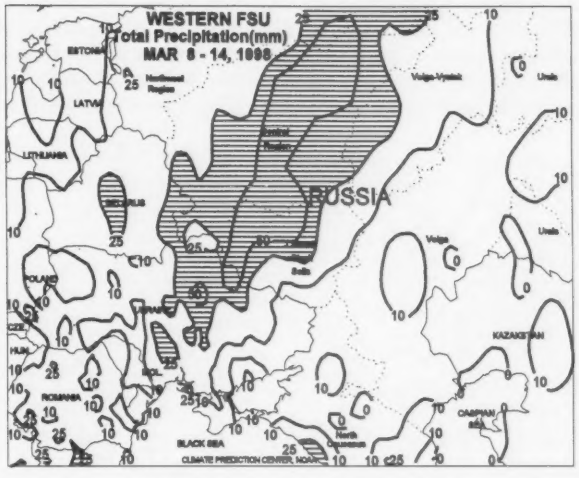
SOUTH AMERICA: In Rio Grande do Sul, Brazil and northern Argentina, heavy showers slowed summer crop harvesting, while drier weather favored corn and sunflower harvesting in central Argentina.





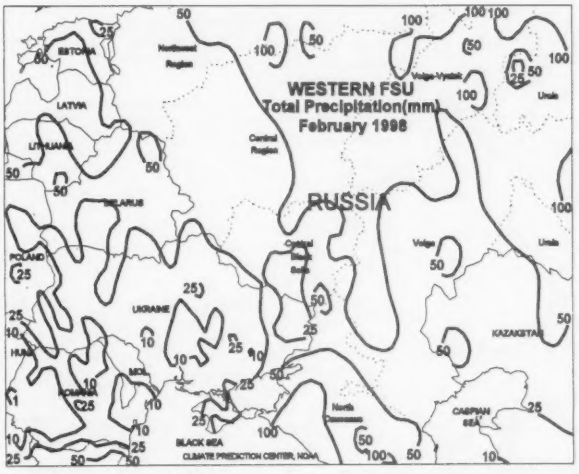


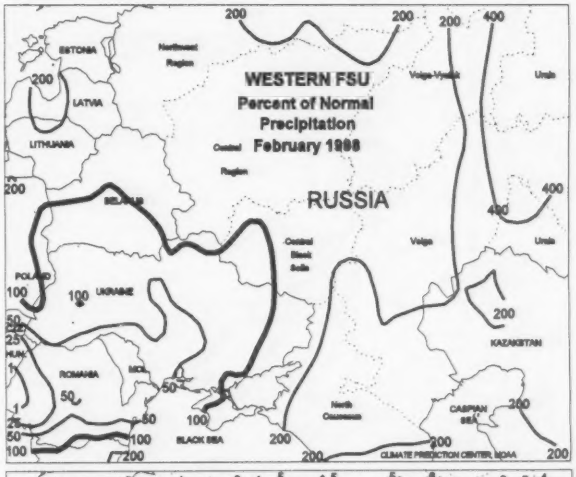


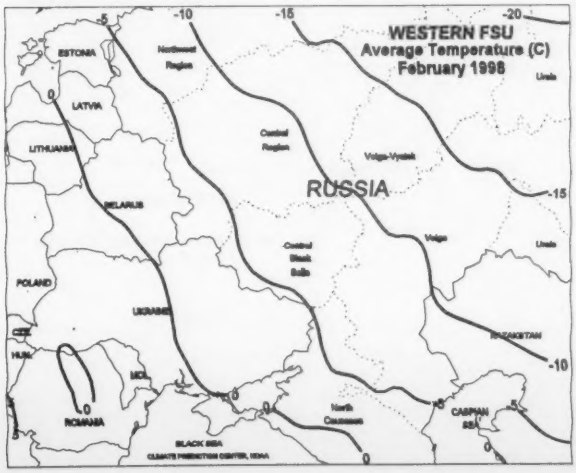


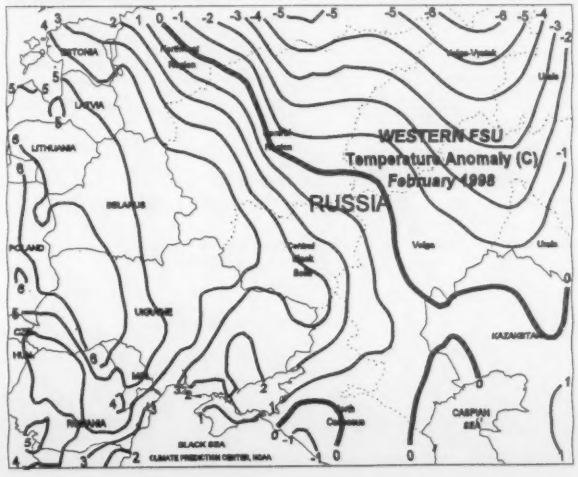
FSU-WESTERN

A cooling trend was accompanied by widespread beneficial rain and snow in most winter grain areas. Greatest amounts of precipitation (10-50 mm, with local amounts in excess of 50 mm) fell in Ukraine, Belarus, and parts of Russia (Northwest Region, Central Region, Volga Vyatsk Region, and Central Black Soils Region). Lesser amounts of moisture (4-12 mm) fell in the Baltics and remaining areas in Russia (Volga Valley and North Caucasus). Rain changed to snow in western areas, with heavy snow falling in Belarus and parts of Ukraine. The moisture that fell in Ukraine was especially beneficial in boosting topsoil moisture, following 2 months of below-normal precipitation. Although temperatures did not fall low enough to threaten winter grains, the colder weather kept winter grains dormant in most areas. In February, overwintering conditions continued mostly favorable for winter grains in Russia, Ukraine, Belarus, and the Baltics. In early February, bitterly cold weather was accompanied by light to moderate snow in most areas. Minimum temperatures ranged from -15 to -30 degrees C as far south as southern Ukraine and the North Caucasus region in Russia. A fresh snow cover in most areas protected winter grains from potential widespread damage. On February 9, a warming trend began in winter grain areas in Ukraine, the North Caucasus region in Russia, Belarus, and the Baltics and continued until month's end, improving overwintering conditions for winter grains, but melting protective snow cover. In most of Russia, although temperatures fluctuated widely during February, a moderate to deep snow cover protected most winter grains from potential damage. Above-normal precipitation fell in Russia, Belarus, and the Baltics in February, boosting potential moisture reserves. More than twice the normal amount of moisture fell in the North Caucasus region in Russia. Winter grain areas in Ukraine continued to receive below-normal precipitation in February. The lack of snow cover and generally dry weather in Ukraine favored early-season fieldwork, including early-spring fertilizer applications.



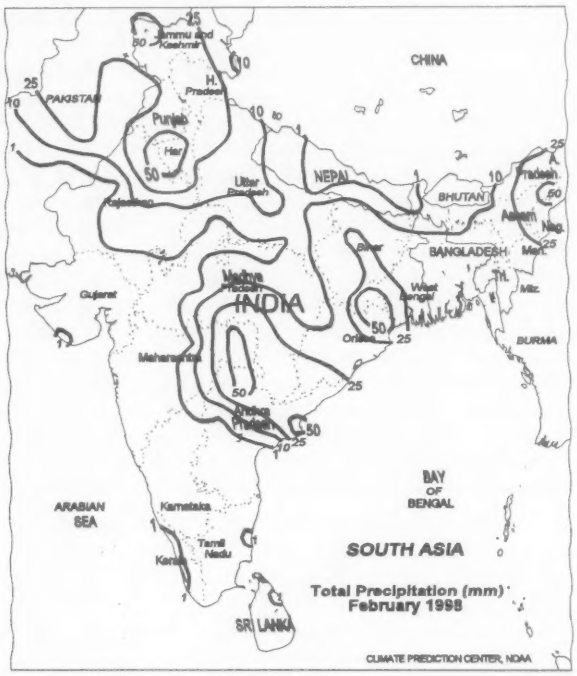


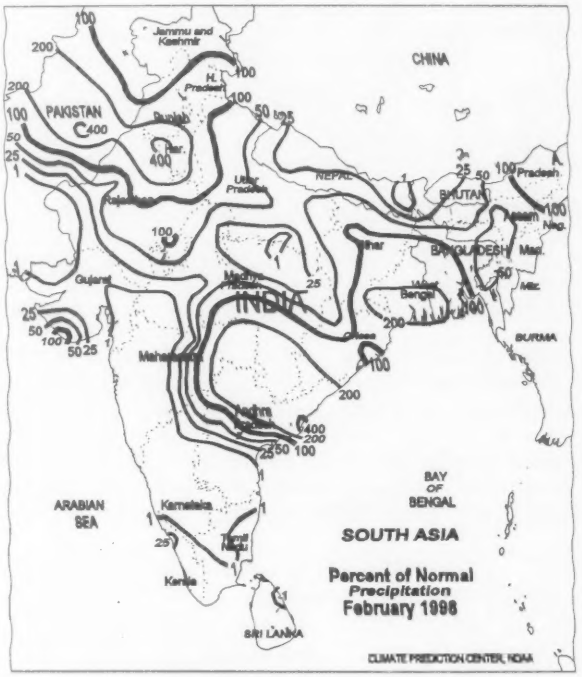


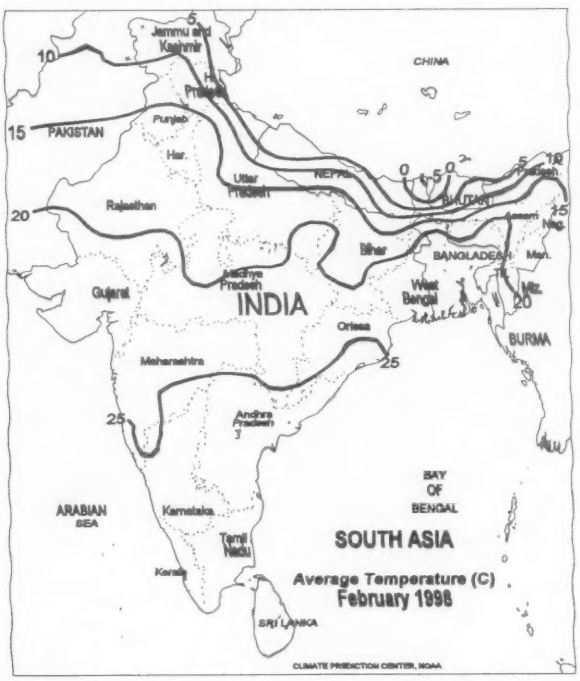


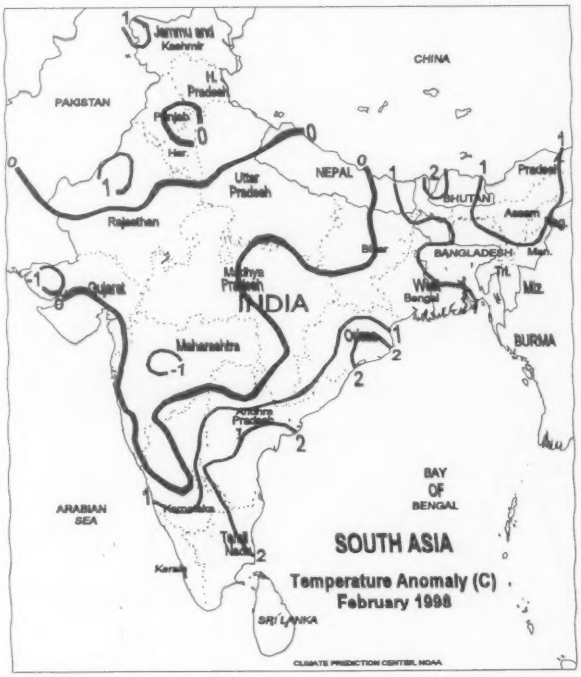
SOUTH ASIA

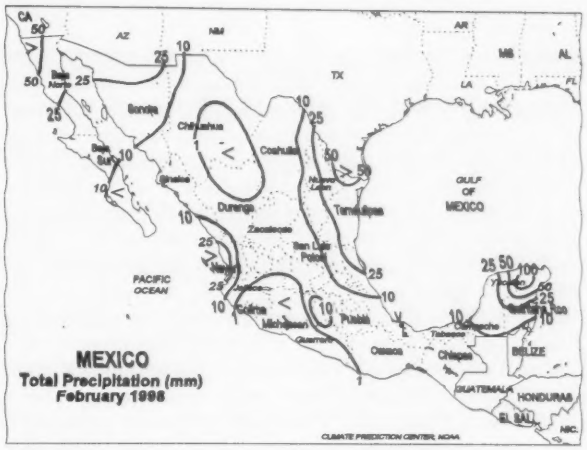
In February, moderate showers (10-50 mm or more) covered northern winter crop areas of Pakistan and India, boosting moisture for immature wheat and rapeseed. Rain (10-25 mm or more, locally exceeding 50-100 mm) also fell in eastern rice areas from Andhra Pradesh through Bangladesh. Early harvesting of winter-grown crops (wheat, rapeseed, and rabi crops such as rice and groundnuts) are likely underway in southern growing areas, with activity moving northward over the next few weeks.

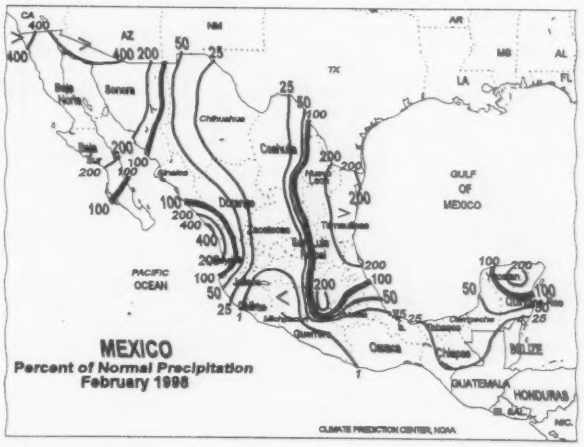


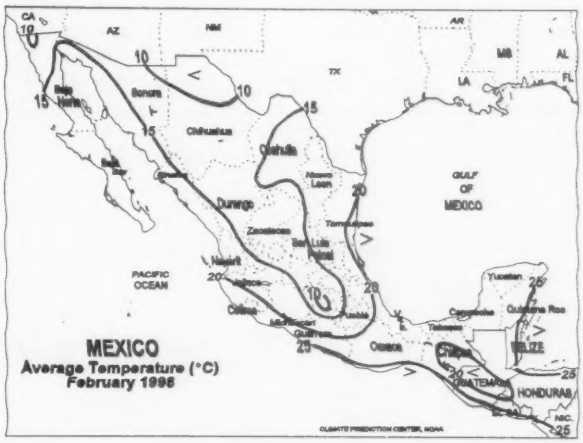


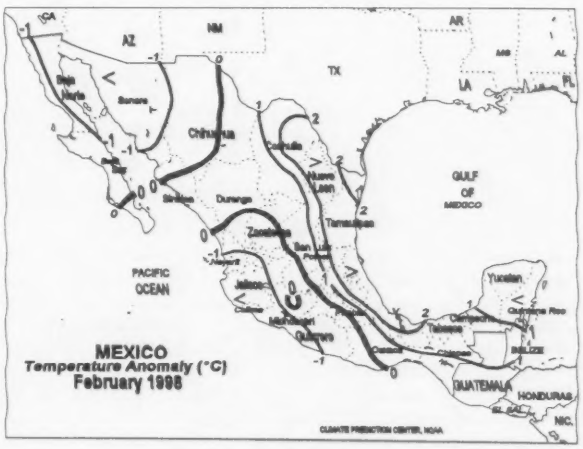


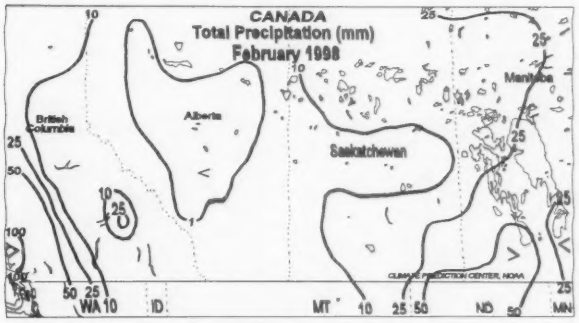


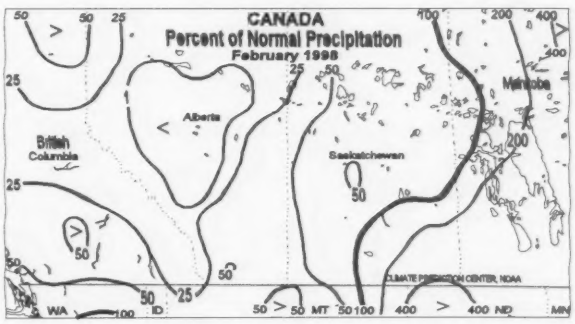

MEXICO
Total Precipitation (mm)
February 1998
CLIMATE PREDICTION CENTER, NOAA

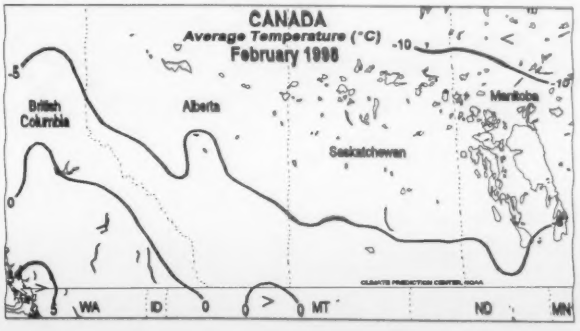

MEXICO
Percent of Normal Precipitation
February 1998
CLIMATE PREDICTION CENTER, NOAA

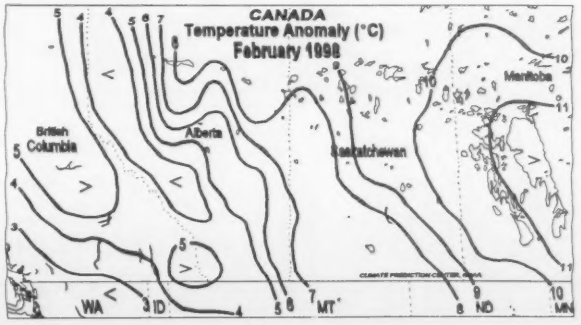

MEXICO
Average Temperature (°C)
February 1998
CLIMATE PREDICTION CENTER, NOAA

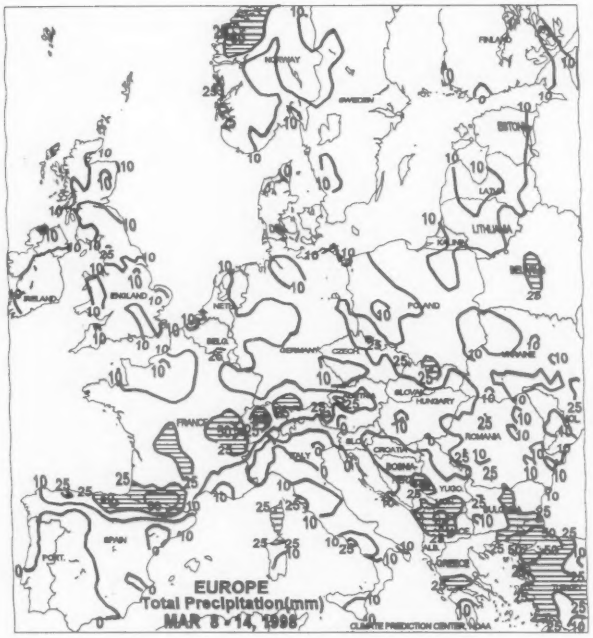

MEXICO
Temperature Anomaly (°C)
February 1998
CLIMATE PREDICTION CENTER, NOAA


CANADA
Total Precipitation (mm)
February 1998
CLIMATE PREDICTION CENTER, NOAA


CANADA
Percent of Normal Precipitation
February 1998
CLIMATE PREDICTION CENTER, NOAA

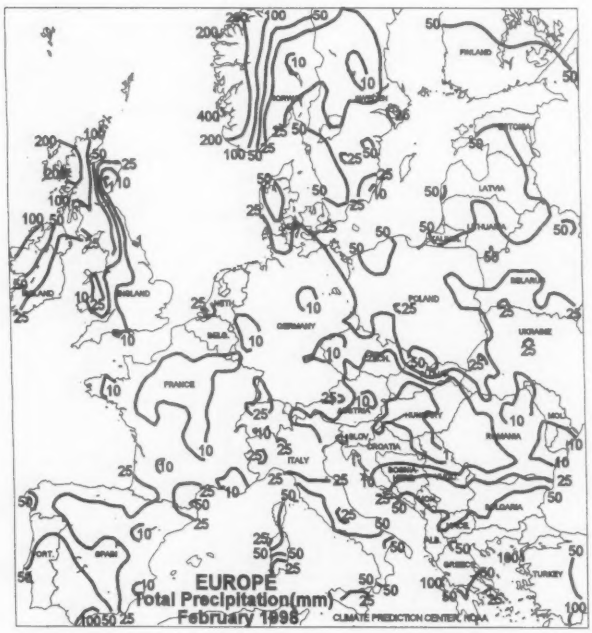

CANADA
Average Temperature (°C)
February 1998
CLIMATE PREDICTION CENTER, NOAA

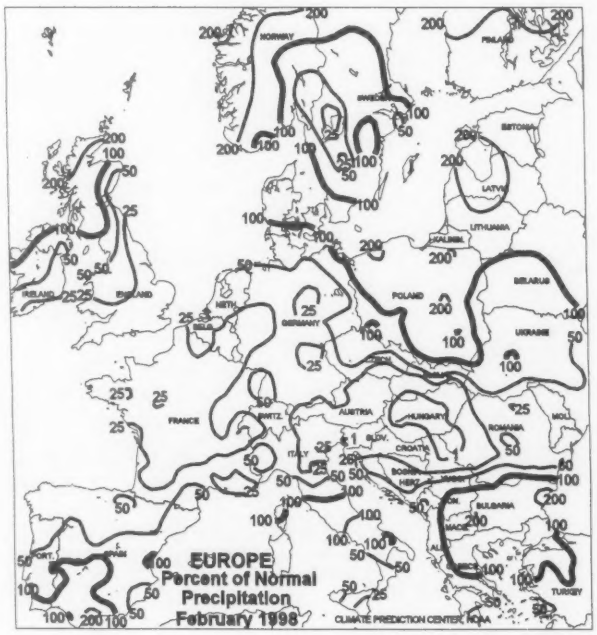

CANADA
Temperature Anomaly (°C)
February 1998
CLIMATE PREDICTION CENTER, NOAA

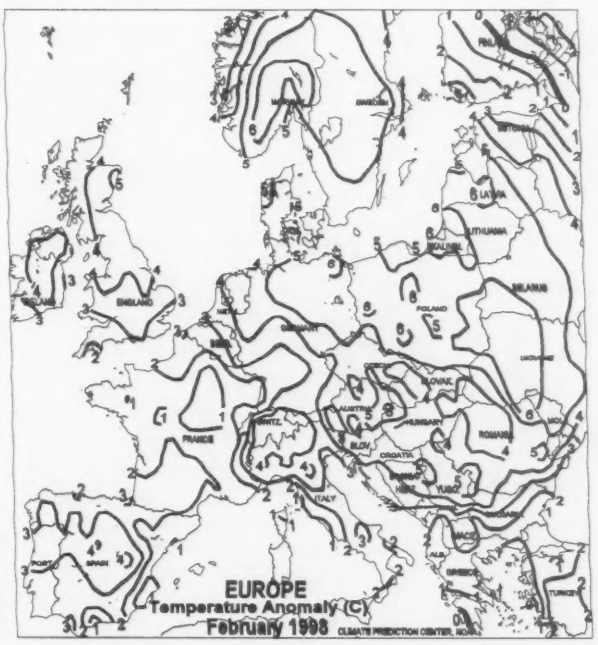


EUROPE

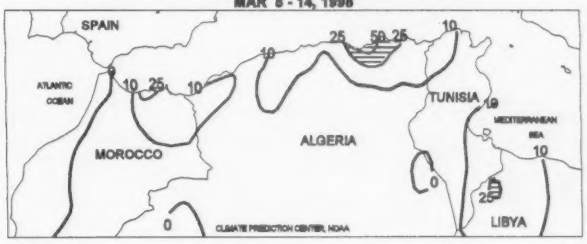
Unseasonably cool weather prevailed over Europe, slowing winter grain development that was 1 to 3 weeks ahead of normal. Weekly temperatures averaged 1 to 3 degrees C below normal throughout most of Europe. Light precipitation (5-25 mm) accompanied the cooler weather in northern Europe, slowing early fieldwork for spring grain planting. Farther south, several days of dry weather in Spain and Italy favored early-summer crop planting. Cold, wet weather (10-31 mm) in Greece slowed cotton planting. In February, a brief episode of bitterly cold weather prevailed over winter grain areas in northeastern Europe from February 1-3, accompanied by some snow. The cold spell was followed by unusually mild weather that began about February 8 and persisted until month's end. The mild weather pattern prompted winter grains to break dormancy 1 to 3 weeks earlier than usual in most areas. By month's end, winter grains were greening in eastern Europe and rapidly developing in the western and southern areas. The combination of unusually mild weather and below-normal precipitation in England, France, Germany, and northern Italy favored early-spring fieldwork. Above-normal precipitation was confined to Poland, Bulgaria, and extreme southern Spain.







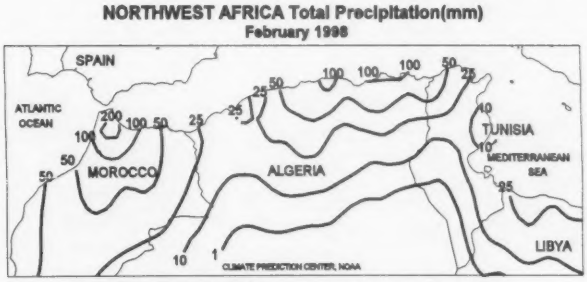
NORTHWEST AFRICA Total Precipitation (mm)
MAR 8 - 14, 1998



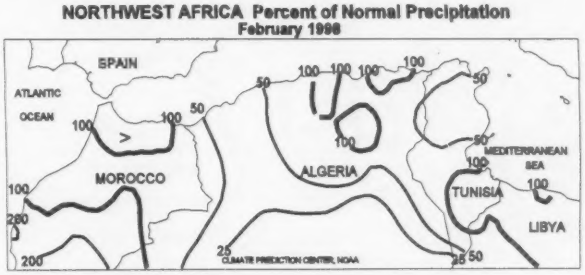
NORTHWESTERN AFRICA

The fifth consecutive week of dry weather prevailed over winter grain areas in Morocco, increasing stress on winter grains, in or nearing the heading stage of development. Rain is needed soon to prevent further declines in crop conditions. Farther east, light showers (7-25 mm) fell in Algeria and Tunisia, providing some moisture for winter wheat in the jointing stage. In February, wet weather in Morocco early in the month was followed by a dry weather pattern that began about February 8 and persisted until month's end. As a result, moisture reserves were depleted during the month as winter grains advanced through the jointing stage of development. Farther east, below-normal precipitation in winter grain areas of Algeria and Tunisia in February maintained January's below-normal precipitation pattern in these areas. Subsoil moisture reserves remain critically low throughout Morocco, Algeria, and Tunisia, necessitating timely rains during the remainder of the growing season to prevent significant declines in yield prospects.

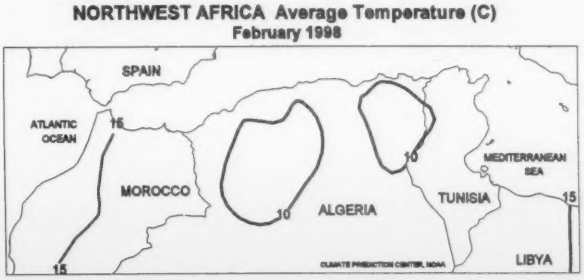
NORTHWEST AFRICA Total Precipitation(mm)
February 1998



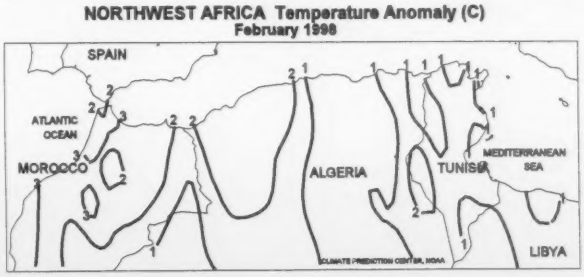
NORTHWEST AFRICA Percent of Normal Precipitation
February 1998

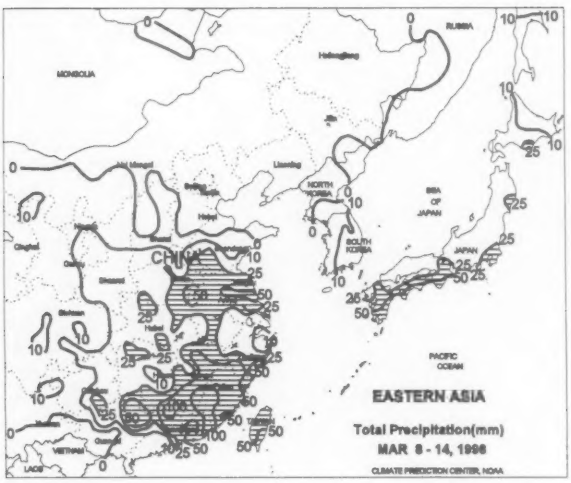


NORTHWEST AFRICA Average Temperature (C)
February 1998



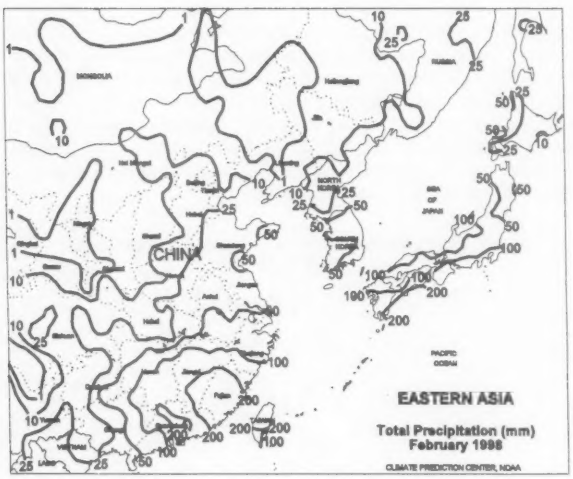
NORTHWEST AFRICA Temperature Anomaly (C)
February 1998

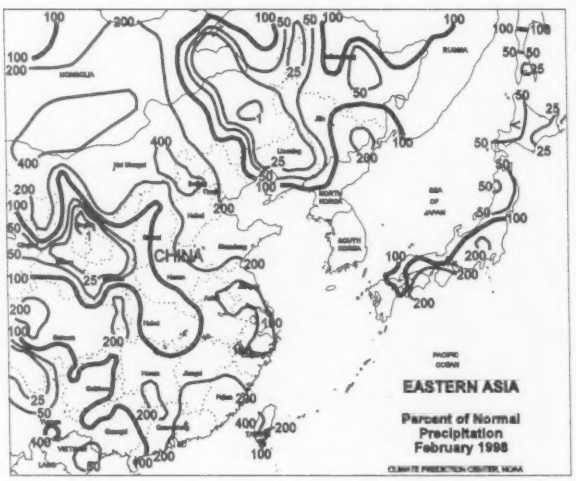


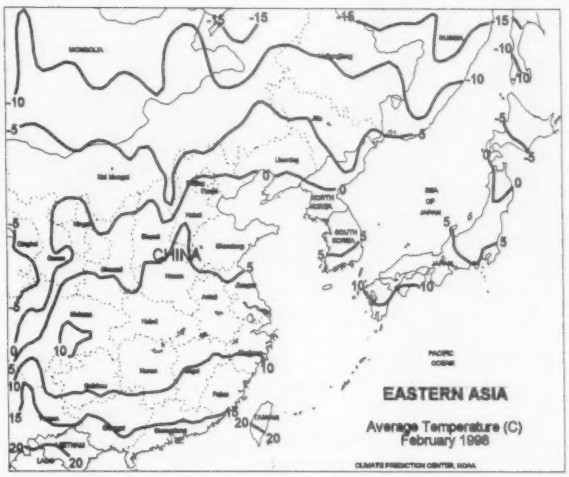


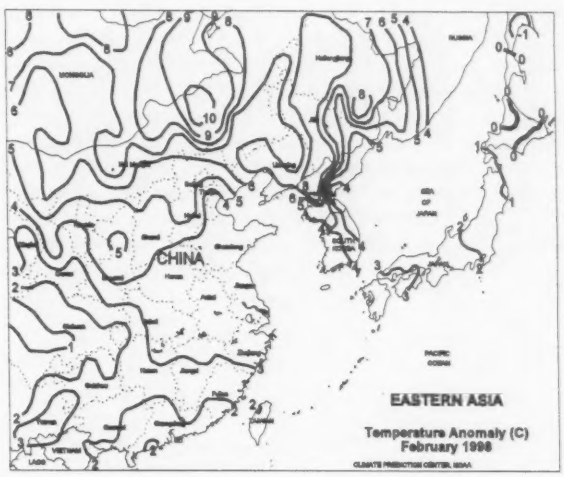
EASTERN ASIA

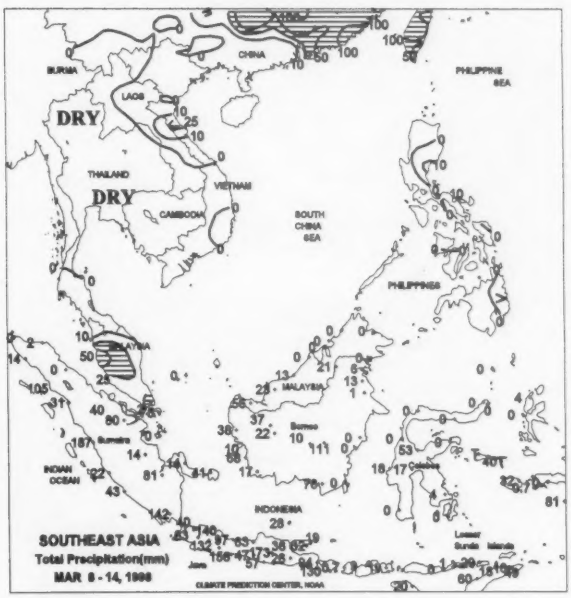
Timely rainfall (5-40 mm) benefited greening winter wheat across the southern half of the North China Plain (Henan, southern Shandong, northern Anhui, and Jiangsu). Winter wheat continued to break dormancy across the region. Showers (20-80 mm, with isolated amounts greater than 100 mm) covered southern China, aiding early double-crop rice and early corn, but increasing disease potential for winter oilseeds. During February, above-normal rainfall continued to increase moisture supplies across most of eastern and southern China. February temperatures averaged 3 to 4 degrees above normal, prompting winter wheat to begin breaking dormancy earlier than normal.





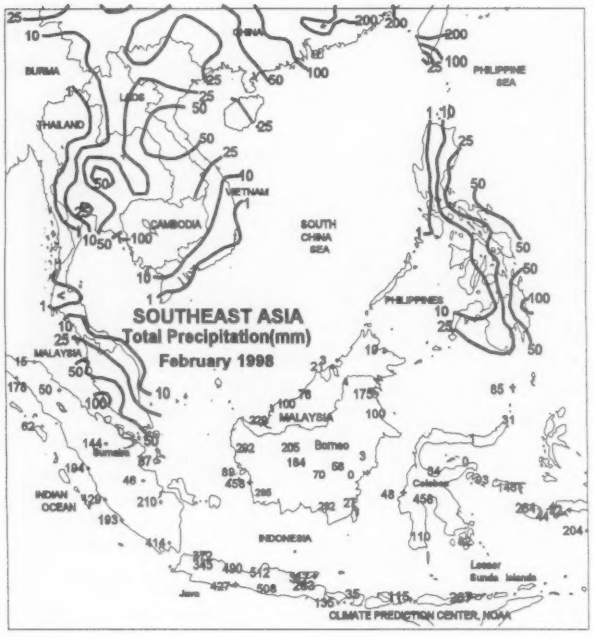






SOUTHEAST ASIA

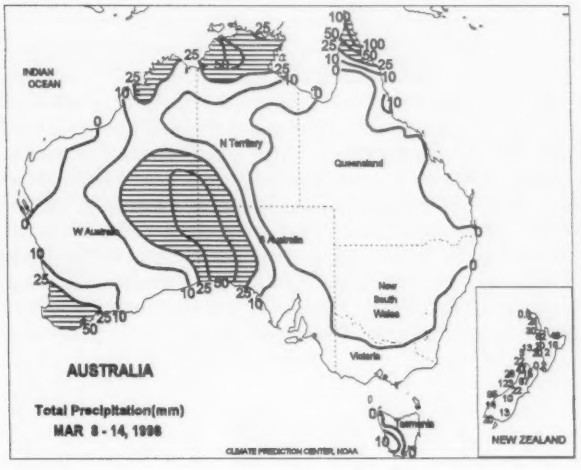
In Java and southern Sumatra, seasonably heavy showers (50-130 mm) continued to benefit main-season rice and reduce long-term moisture deficits. This is a continuation of the above-normal February rainfall. Mostly dry weather worsened drought across the eastern Philippines and oil palm areas of eastern Malaysia (Sabah). The eastern Philippines received less than 50 percent of normal rainfall during February. Hot weather (1-3 degrees C above normal) during the week increased irrigation use across Thailand.


SOUTHEAST ASIA
Total Precipitation(mm)
February 1998
CLIMATE PREDICTION CENTER, NOAA

SOUTHEAST ASIA
Percent of Normal
Precipitation
February 1998
CLIMATE PREDICTION CENTER, NOAA

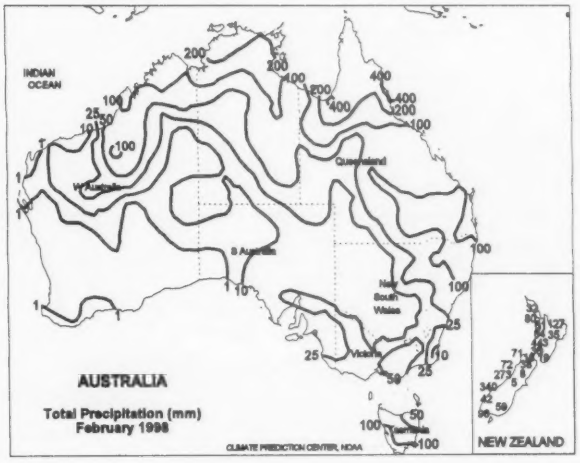
SOUTHEAST ASIA
Average Temperature (C)
February 1998

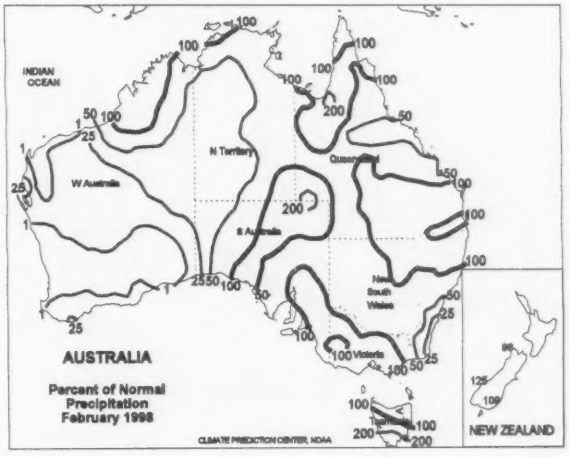
SOUTHEAST ASIA
Temperature Anomaly
February 1998
CLIMATE PREDICTION CENTER, NOAA

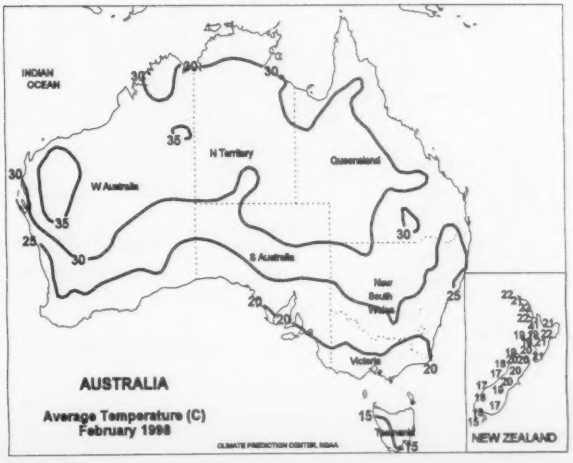


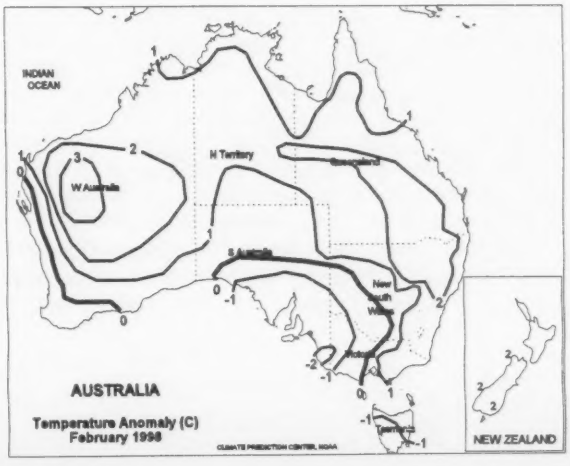
AUSTRALIA

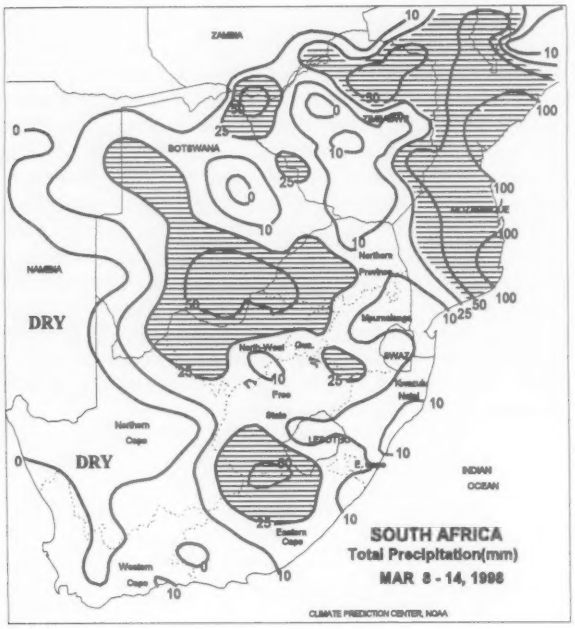
Warm, dry weather continued throughout the east, benefiting mature cotton and sorghum. Monsoon rains receded to northern sections of the Cape York Peninsula and Arnhem Land, allowing northernmost sugarcane areas to dry out. In the southwest, moderate showers (10-25 mm or more) covered primary agricultural areas of Western Australia, benefiting livestock and increasing soil moisture for wheat. Scattered showers (10-25 mm or more) continued across New Zealand. February rainfall was near to above normal throughout eastern Australia, the exception being some sugarcane areas along the Queensland coast that were drier than normal. Most of the rain in the main sorghum and cotton areas fell during mid month, with favorable dryness settling into the area by late February. At month's end, heavy rain had developed over northern sugarcane areas, but a drying trend had begun over the bulk of the region.





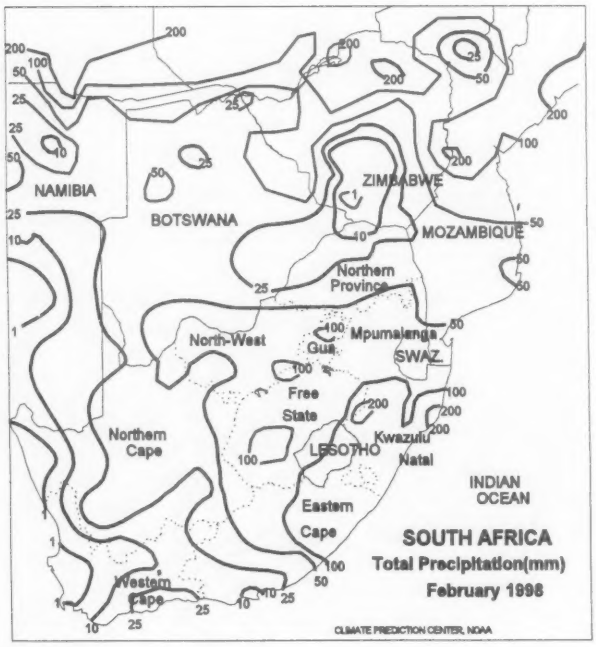


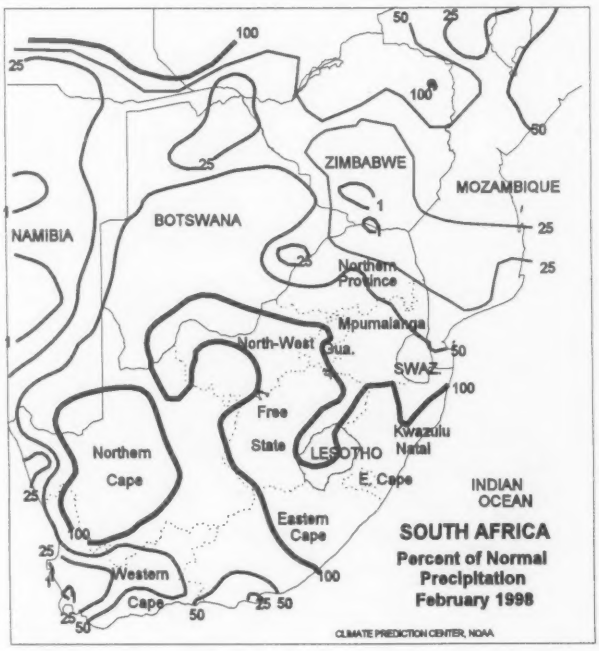


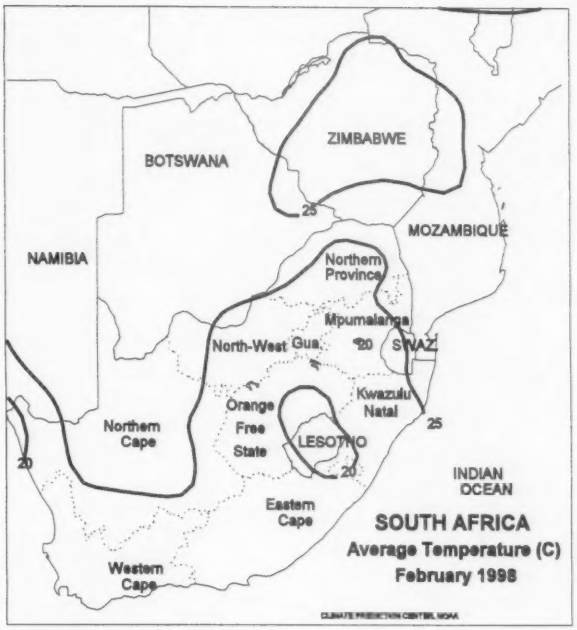


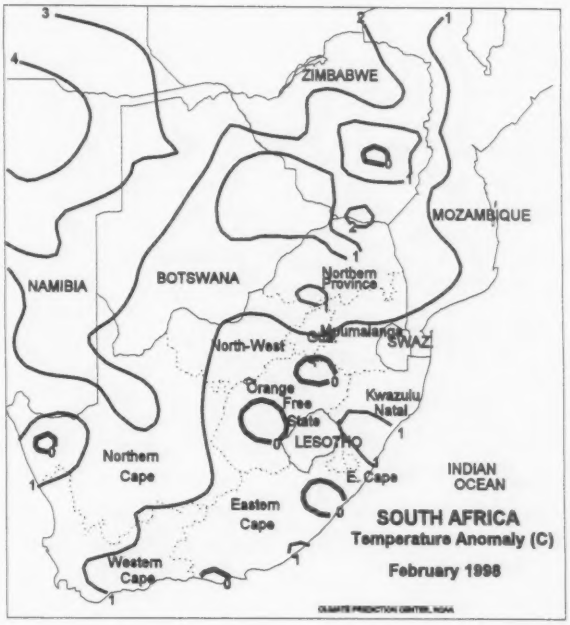
SOUTH AFRICA

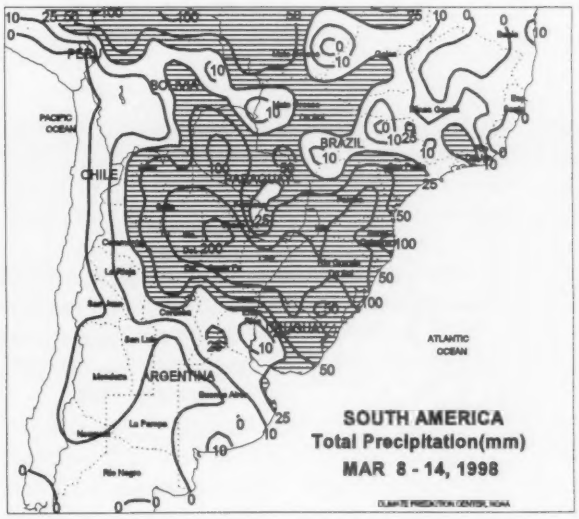
Scattered showers (10-25 mm, locally exceeding 50 mm) swept across the corn belt. Cool weather accompanied the rain, slowing growth of corn and other summer crops. Warmer, drier weather dominated the coastal provinces, favoring activities ranging from early sugarcane harvesting to wheat pre-planting fieldwork. February got off to a warm, dry start, with reproductive corn experiencing some stress early in the month. Locally heavy, soaking rain during the third week brought relief to summer crops but caused some flooding in sugarcane areas of Kwazulu-Natal. Crops now need warm, sunny weather to reach maturity before the first autumn freeze.





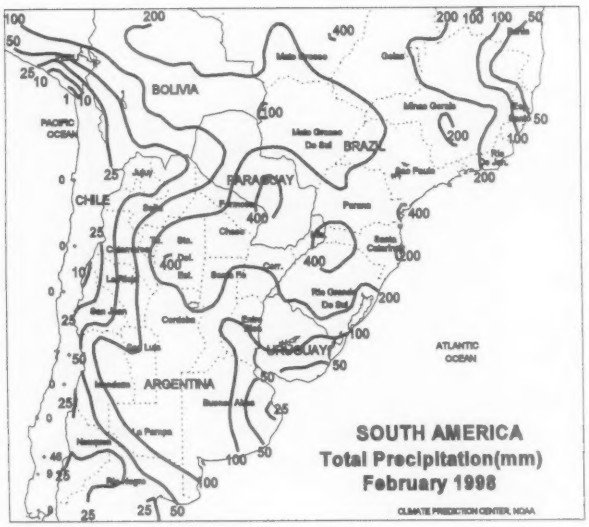


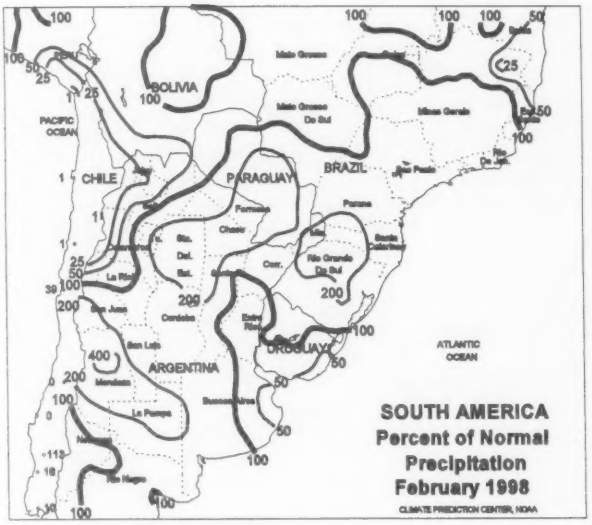




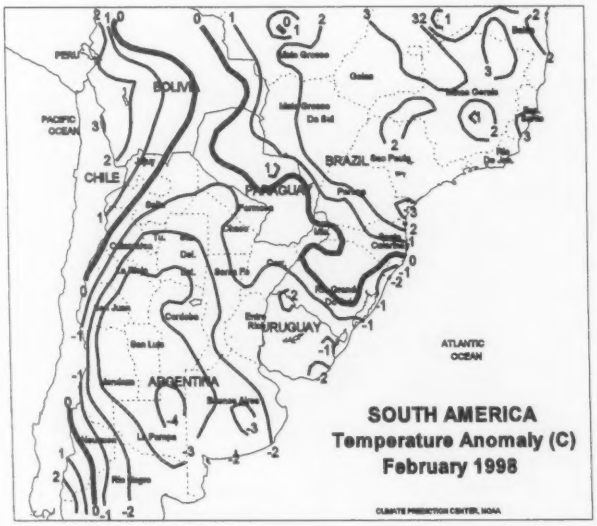
SOUTH AMERICA

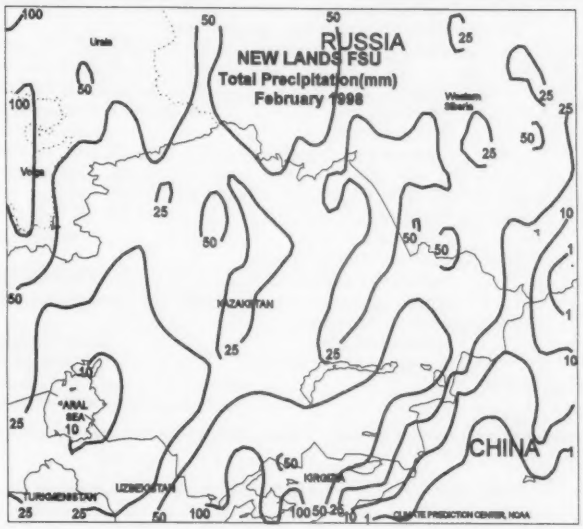
Heavy showers (90-120 mm) slowed soybean harvesting in Rio Grande do Sul, Brazil. Elsewhere in southern Brazil, variable showers (10-40 mm) favored late-filling soybeans, but did not significantly hamper soybean harvesting. Brazilian soybean harvesting is about 15 percent complete. In northern Argentina, heavy showers (150-200 mm) possibly damaged maturing cotton and slowed harvest activities. Farther south in central Argentina, drier weather (5-20 mm, with an isolated amount greater than 40 mm) favored corn and sunflower harvesting. According to reports as of March 5, corn harvesting is 4 percent and sunflower harvesting 28 percent complete. Near- to above-normal February rainfall provided ample moisture for filling summer crops across Argentina and southern Brazil. Monthly temperatures averaged 2 to 4 degrees C below normal across central Argentina and 1 to 3 degrees C above normal in southern Brazil.

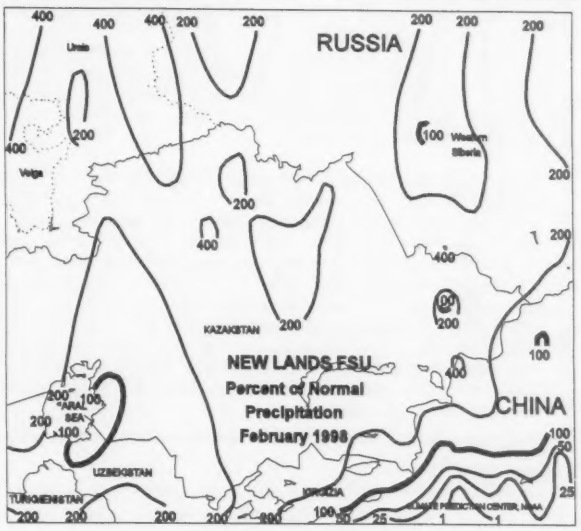

BOLIVIA
PACIFIC OCEAN
CHILE
PARAGUAY
BRAZIL
URUGUAY
ARGENTINA
ATLANTIC OCEAN
SOUTH AMERICA
Total Precipitation(mm)
February 1998
CLIMATE PREDICTION CENTER, NOAA

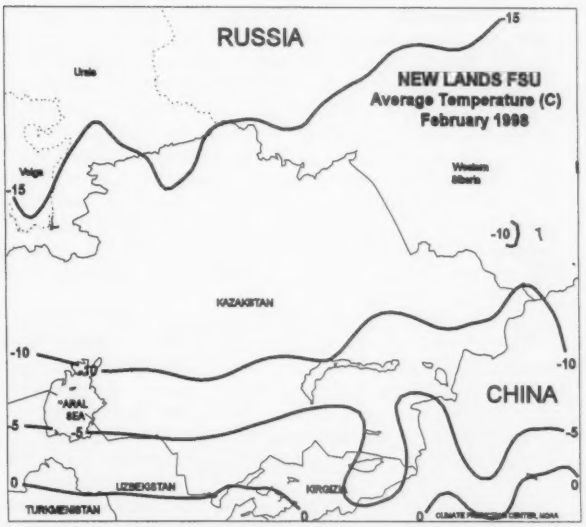

BOLIVIA
PACIFIC OCEAN
CHILE
PARAGUAY
BRAZIL
URUGUAY
ARGENTINA
ATLANTIC OCEAN
SOUTH AMERICA
Percent of Normal
Precipitation
February 1998
CLIMATE PREDICTION CENTER, NOAA

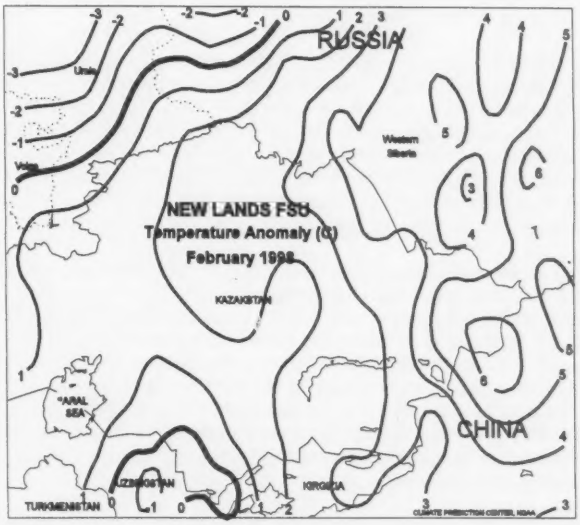
BOLIVIA
PACIFIC OCEAN
CHILE
PARAGUAY
BRAZIL
URUGUAY
ARGENTINA
ATLANTIC OCEAN
SOUTH AMERICA
Average Temperature (C)
February 1998
CLIMATE PREDICTION CENTER, NOAA


BOLIVIA
PACIFIC OCEAN
CHILE
PARAGUAY
BRAZIL
URUGUAY
ARGENTINA
ATLANTIC OCEAN
SOUTH AMERICA
Temperature Anomaly (C)
February 1998
CLIMATE PREDICTION CENTER, NOAA









El Niño Update

The following is derived from the El Niño/Southern Oscillation (ENSO) Diagnostic Advisory 98/2 issued by the Climate Prediction Center/National Centers for Environmental Prediction (NCEP) on March 10, 1998.

Very warm episode (ENSO) conditions continued during February 1998, as tropical Pacific sea surface temperatures (SST's) remained well above normal east of the date line. SST anomalies exceeded +2.0°C over the equatorial Pacific east of 170°W and +3.0°C from 140°W eastward. Actual SST's greater than 28°C (the threshold for deep tropical convection and heavy precipitation) were observed everywhere throughout the equatorial Pacific.

Based on current conditions in the tropical Pacific and on the NCEP SST predictions, we expect warm episode (ENSO) conditions to continue through May. We also expect anomalous circulation features to continue over North America through March, and possibly into April. Impacts of these conditions are likely to be recurring periods of significant storm activity and precipitation across California and the southern tier of the United States. Globally, we expect drier-than-normal conditions over Indonesia, northern Australia, northern South America, and southern Africa, and wetter-than-normal conditions over the central and eastern equatorial Pacific, along the coasts of Ecuador and northern Peru, and over southeastern South America. A return to wetter-than-normal conditions is also likely over central Chile during April through July, as the jet stream over the eastern South Pacific continues to be stronger than normal.

The *Weekly Weather and Crop Bulletin* (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the *Weekly Weather Chronicle*. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53rd Congress, 3rd Session. NOAA is responsible for managing, printing, and distributing the bulletin. The contents may be reprinted freely, with proper credit.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center
Managing Editor . . . . . ***Douglas Le Comte*** (202) 720-7919
fax (202) 720-1455
Editor . . . . . ***Brad Rippey*** (202) 720-1444
Meteorologists . . . . . ***Jeff Savadel and Brian Morris***
Special Requests . . . . . (202) 720-7917
Subscriptions . . . . . ***John Kopman*** (301) 763-8227, ext. 7534
fax (301) 763-8125

U.S. DEPARTMENT OF AGRICULTURE
Economic Research Service
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National Agricultural Statistics Service
Agricultural Statistician . . . . . ***Mark E. Miller*** (202) 720-7621
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(Continued from front cover)

southern Plains at week's end. Farther east, snow continued early in the week across the **Midwestern and Great Lakes States**, while rainfall exceeded 2 inches along the entire **Atlantic Seaboard**. In parts of the **Southeast**, serious flooding continued in the wake of earlier rains.

On Sunday, **Des Moines, IA** received 11.0 inches of snow, their greatest calendar-day total on record in March. **Omaha, NE** netted 12.7 inches, their highest storm-total snowfall since 14.1 inches fell on March 28-29, 1987. Farther north, totals in **Michigan** reached 15.7 inches in **Gaylord** and 15.9 inches in **Houghton Lake**. Meanwhile, heavy rain developed along the **East Coast**. In **Worcester, MA**, rainfall of 3.73 inches on March 9 was their third-highest calendar-day total for March. For **Hartford, CT** (2.40 inches), **Providence, RI** (3.02 inches), and **Worcester**, Monday was the rainiest March day since March 31, 1987.

In **southeastern Alabama**, the **Pea River** at **Elba** crested on Monday at 9.20 feet above flood stage (afs), 2 days after flooding much of the town. The crest was the town's third highest on record, more than 10 inches above the July 1994 (Tropical Storm Alberto) level. Other gauging points in the **Southeast** that approached record levels included the **Apalachicola River** at **Blountstown, FL** (12.23 feet afs on March 13, third highest on record), the **Withlacoochee River** at **Valdosta, GA** (9.5 feet afs, fourth highest), and the **Choctawhatchee River** at **Newton, Alabama** (15.58 feet afs on March 9, fourth highest). At week's end, the worst flooding was occurring along the lower **Flint River** in **Georgia**, where more than 11,000 people remained out of their homes.

A half-dozen daily-record lows were set in the **Rocky Mountain States** on Sunday, including a March-record low of -23°F in **Rawlins, WY**. Bitterly cold air soon overspread the **Central States**, ending long streaks of above-normal temperatures (more than 40 days) in **Moline, IL** and **Milwaukee, WI**. By Wednesday morning, the core of the high-pressure system reached the **South Dakota-Nebraska border** with a central pressure of at least 31.12 inches (1054 millibars). March barometric pressure records were set in **Wichita, KS** (30.91 inches), **Des Moines, IA** (30.90 inches), **St. Louis, MO** (30.81 inches), and **Columbia, MO** (30.80 inches). **Wichita's** reading was their fifth highest on record.

On March 11, a low of -15°F in **Hastings, NE** was a March record. In **South Dakota, Rapid City's** low of -18°F was their second-lowest March reading, behind -21°F on March 8, 1996. Elsewhere, minima included -27°F in **Valentine, NE** and -28°F in **Williston, ND**. A day later in **Omaha, NE**, a low of -11°F represented the latest occurrence of the season's lowest temperature, breaking their record set on March 5, 1960. On Thursday, the season's lowest readings were also observed in several other locations, including -6°F in **Topeka, KS** (previously 6°F on January 13), 4°F in **St. Louis, MO** (13°F on January 13), 8°F in **Indianapolis, IN** (13°F on November 17 and December 31), and 16°F in **Little Rock, AR** (24°F on December 6 and January 16). In **Iowa**, lows of -24°F at **Bedford** and **Guthrie Center** ranked as the State's fourth-lowest March readings. **Kansas City's** low of -7°F was their latest sub-zero reading during any winter season. Farther south, lows dipped below freezing on Friday morning as far south as the **Florida** cities of **Gainesville** (29°F) and **Ocala** (30°F). Other minima in the Southeast included 20°F at both **Augusta, GA** and **Columbia, SC**. Farther north, **Saranac Lake, NY** recorded -19°F.

The cold dealt a glancing blow to jointing winter wheat on the **southern Plains**, where lows dipped into the middle to upper 10's on March 10 and 12. On most of the **central and northern Plains**, snow cover was adequate to protect wheat from the extreme cold. In the **Ohio Valley**, however, lows on March 12 ranged from 0 to 15°F, burning back some recent winter wheat growth. Three consecutive freezes (March 11-13) in the **Southeast** threatened peach blooms and ground crops (for example, vegetables and strawberries).

During the mid- to late-week period, several daily-record highs were set in the **West**. **Chatsworth, CA** notched 87°F on March 11. On Friday, maxima reached 67°F in **Pendleton, OR** and 71°F in **Wenatchee, WA**. Meanwhile in **southern California**, late-week rainfall totaled 0.96 inches in **Torrance** and 1.10 inches in **Oceanside Harbor**. Little or no rain fell in **Hawaii**, however, perpetuating the 4½-month dry spell. In addition, **Honolulu** collected a daily-record high (87°F) on Tuesday. Farther north, very mild weather spread into **western Alaska** (up to 17°F above normal), resulting in daily-record highs on Saturday in **Nome** (40°F) and **King Salmon** (49°F).

Climate Prediction Center, W/NP52
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Volume 85, No. 12 March 24, 1998

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
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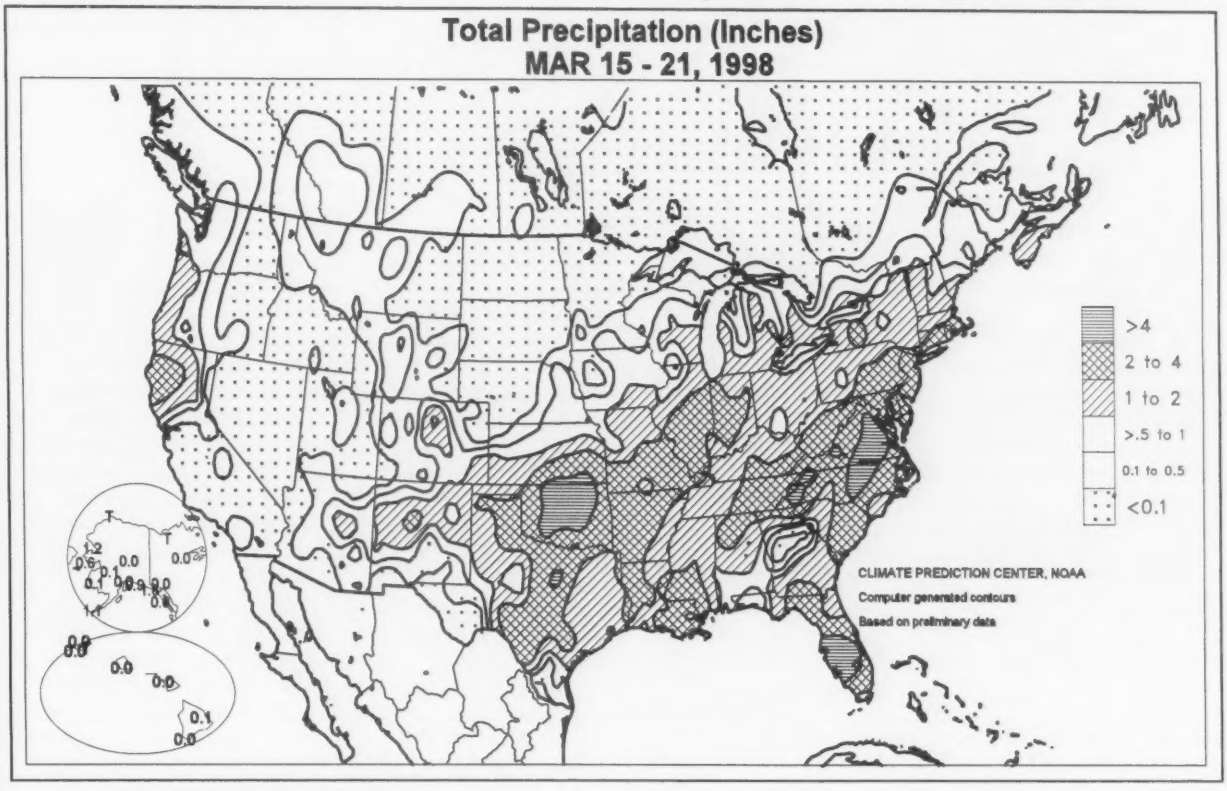

HIGHLIGHTS

March 15 - 21, 1998

Although spring officially began on Friday, winter refused to relinquish its grip on most of the Nation **east of the Rockies** for the second consecutive week. Subnormal temperatures and unseasonably heavy snows blanketed parts of the **central Rockies** and **Plains, Midwest,** and **New England**. In **Colorado,** over 1 foot of snow fell in lower elevations while 2 to 3 feet covered foothills and mountainous areas. In the **East,** generally less than 12 inches of snow fell, but in some locations this snowfall exceeded the entire winter 1997-98 total. Weekly temperatures averaged 3°F to 13°F below normal from **southwestern Texas** northeastward to the **Great Lakes,** and 3°F to 6°F below normal from **central**

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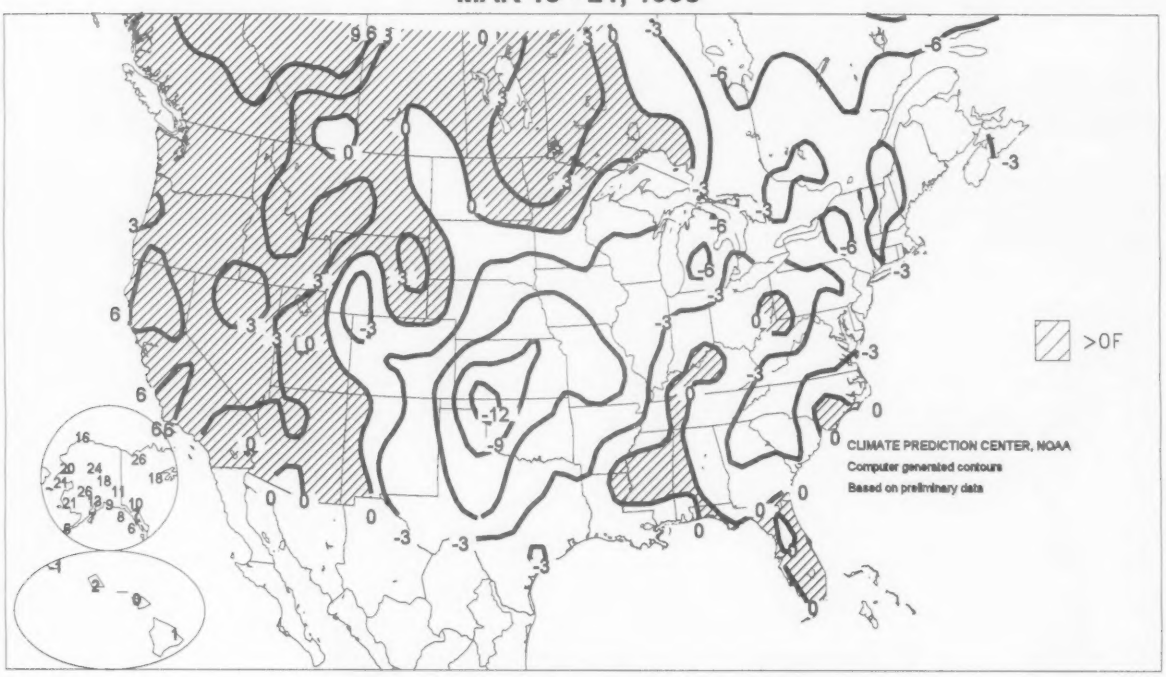
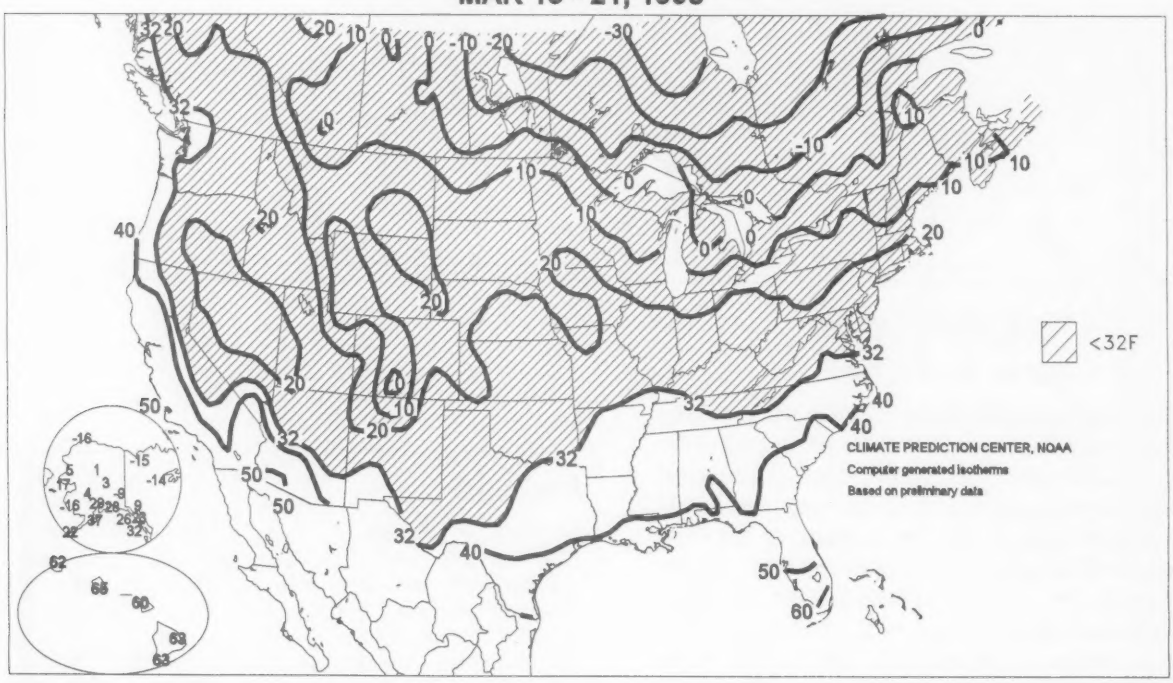
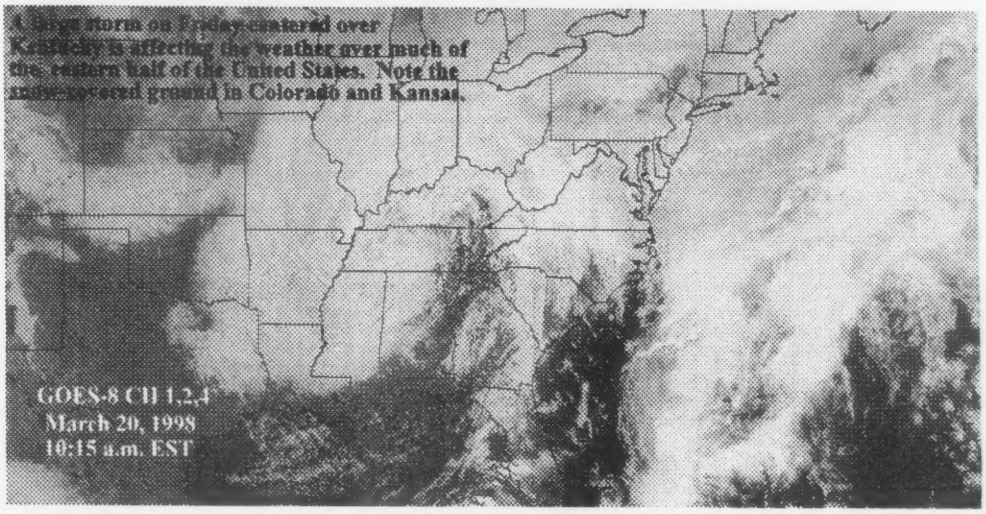
Departure of Average Temperature from Normal (°F)
MAR 15 - 21, 1998



Extreme Minimum Temperature (°F)
MAR 15 - 21, 1998





A large storm on Friday centered over Kentucky is affecting the weather over much of the eastern half of the United States. Note the snow-covered ground in Colorado and Kansas.

(Continued from front cover)

Georgia northeastward into **Maine**. Fortunately, readings were not as severe as last week's Arctic outbreak as the mercury remained above freezing across the **Southeast**. The region, however, was not left unscathed as severe thunderstorms battered the **Southeast**, producing hail and spawning deadly tornadoes in **northeastern Georgia** and **central North Carolina** that took 11 lives near **Gainesville, GA** and 2 in **Stoneville, NC** Friday morning. The pair of strong storm systems responsible for this week's stormy weather also dropped moderate to heavy rains on a large portion of the **south-central Great Plains, middle Mississippi, Ohio,** and **Tennessee Valleys, central Gulf Coast,** and the **Atlantic Coast States**. The rains fell on already-saturated soils, necessitating dozens of flash flood warnings and causing numerous rivers to overflow their banks. In contrast, much of the **West** observed mild and dry weather, except for early-week light showers in the **Southwest** and rains from an approaching cold front at the week's end in **northern California**. Farther north, a persistent southerly flow pushed temperatures to record highs in **Alaska** as weekly departures ranged between +15°F and +26°F across central and northern sections of the State.

Early in the week, a storm system rapidly intensified over **southern New Mexico**, generating showers and thunderstorms across **Texas** and **Oklahoma**. On Sunday, a record 0.93 inches of rain dampened **Del Rio, TX** while 6 to 12 inches of snow blanketed the **Texas** and **Oklahoma Panhandles** and the higher elevations of **New Mexico**. **Albuquerque, NM** set daily precipitation records on both Sunday (1.45 inches) and Monday (0.42 inches). On Monday, strong thunderstorms dropped a record 1.34 and 1.23 inches of rain on **Austin** and **San Antonio, TX,** respectively. In contrast, a large area of high pressure over the **Great Lakes** kept the eastern half of the Nation relatively dry and chilly, although the bitterly cold Arctic air was confined to **Canada** and **northern Michigan**. Record lows were set at **Houghton Lake** (-10°F), **Alpena** (-9°F), and **Muskegon, MI** (9°F) on March 16. Fortunately, the dry weather allowed swollen rivers to recede in **Alabama, Georgia,** and **Florida.** As the storm system slowly tracked to the northeast Tuesday, heavy rains pushed into the **central Great Plains, Midwest,** and **southern Mississippi Valley,** including a record rainfall of 1.62 inches at **Peoria, IL** on March 17. As the moisture advected northward into the retreating cold air, 5 to 10 inches of snow fell on **northern Michigan,** setting a new March record of 40.0 inches (through March 17) at **Alpena, MI** after minimal snowfall this winter.

By Tuesday afternoon into Wednesday, a second storm system quickly dropped southeastward from **southern British Columbia** into the **central Rockies** and rapidly strengthened. Heavy snow (1 to 3 feet) covered much of **Colorado,** including nearly 2 feet at **Colorado Springs, CO**. Meanwhile, the first storm system slowly moved into **southeastern Canada,** generating widespread showers and thunderstorms from **Florida** northward into **New England**. The rains were locally heavy, and dumped record March 19 rainfall at **Bridgeport, CT** (1.56 inches), **Newark, NJ** (1.40 inches), **Melbourne, FL** (3.22 inches), and **Orlando, FL** (2.17 inches). By Thursday afternoon, the second storm system further intensified and moved steadily eastward over the **south-central Mississippi Valley,** setting the **East Coast** up for a second round of heavy rainfall for the weekend.

By Friday morning, the deep low pressure area was centered over **Kentucky** and spreading a large canopy of cold rain to the north, with snow along the fringe in northern parts of **Missouri** and **Illinois**. Severe weather developed in the warm sector to the southeast, with the deadly outbreak of tornadoes in **northeastern Georgia** around 6:30 a.m. EST, and more killer tornadoes in **central North Carolina** later that morning. Numerous thunderstorms spread heavy rains northward Friday night into the **Mid-Atlantic States,** while snow fell to the north. With the storm centered near the **Delaware coast** by Saturday afternoon, snow was falling from **Pennsylvania** into **New England**. The 5 inches recorded in **New York City** by Sunday afternoon was 10 times the amount that had accumulated for the entire season up to this weekend. More spring-like weather, however, prevailed in **Alaska,** where **Barrow** and **Juneau** tied the record high temperature for March with readings of 34°F and 61°F, respectively, on Saturday. Very dry and warm weather persisted across **Hawaii,** with **Honolulu** failing to record any measurable March rainfall (through the 23rd), and only reporting 0.98 inches since January 1 (normal=7.42 inches).

National Weather Data for Selected Cities

Weather Data for the Week Ending March 21, 1998

Data Provided by Climate Prediction Center (301-763-8000 EXT. 7511) and the Southern Regional Climate Center

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	62	46	76	36	54	-1	0.72	-0.71	0.63	4.86	115	21.44	153	89	58	0	0	3	1
	HUNTSVILLE	58	44	70	38	51	-2	1.87	0.33	0.89	3.60	80	18.19	125	89	63	0	0	4	2
	MOBILE	67	50	74	39	59	-2	0.85	-0.62	0.50	10.98	247	32.18	220	96	68	0	0	5	1
	MONTGOMERY	66	49	77	40	57	-1	1.28	-0.15	0.98	2.60	60	16.50	114	90	62	0	0	5	1
AK	ANCHORAGE	45	32	49	29	39	13	0.00	-0.17	0.00	0.00	0	0.63	31	85	49	0	4	0	0
	BARROW	8	-6	34	-16	1	16	0.02	-0.01	0.02	0.04	50	0.04	13	87	80	0	7	1	0
	FAIRBANKS	48	14	54	3	30	18	0.00	-0.08	0.00	0.00	0	0.08	7	88	40	0	7	0	0
	JUNEAU	48	32	61	23	40	7	–	–	–	–	–	–	–	97	67	0	3	4	0
	KODIAK	42	38	48	37	40	7	–	–	–	–	–	–	–	97	80	0	0	5	3
	NOME	35	26	39	17	30	21	0.57	0.46	0.23	0.72	218	1.94	112	90	76	0	6	6	0
AZ	FLAGSTAFF	52	26	61	16	39	3	0.47	-0.12	0.23	1.51	86	4.95	84	91	32	0	5	3	0
	PHOENIX	72	53	80	50	62	0	0.08	-0.12	0.08	0.19	29	3.47	173	75	34	0	0	1	0
	PRESCOTT	60	33	66	25	46	3	0.24	-0.18	0.19	0.79	61	3.61	83	86	33	0	3	3	0
	TUCSON	70	48	78	42	59	0	0.03	-0.14	0.03	0.25	50	3.62	177	84	33	0	0	1	0
	YUMA	79	55	84	51	67	2	0.00	-0.06	0.00	0.07	41	1.33	182	68	30	0	0	0	0
AR	FORT SMITH	56	41	63	31	48	-4	2.56	1.84	0.76	3.83	146	14.64	205	96	74	0	1	5	3
	LITTLE ROCK	60	43	71	37	52	-2	1.85	0.74	0.92	3.83	117	14.04	140	91	65	0	0	4	2
CA	BAKERSFIELD	72	48	77	45	60	2	0.00	-0.24	0.00	0.76	104	7.44	281	92	54	0	0	0	0
	EUREKA	61	45	66	38	53	4	0.54	-0.69	0.45	2.70	51	29.45	204	99	68	0	0	4	0
	FRESNO	72	51	76	46	61	6	0.01	-0.42	0.01	0.48	37	8.68	172	88	47	0	0	1	0
	LOS ANGELES	65	55	68	53	60	2	0.00	-0.44	0.00	1.03	71	18.09	284	94	79	0	0	0	0
	REDDING	69	51	75	44	60	8	1.29	0.29	1.23	2.56	82	31.99	235	77	44	0	0	3	1
	SACRAM/MCCLELL	71	52	73	48	61	–	0.10	–	0.10	0.34	–	19.52	–	92	58	0	0	1	0
	SAN DIEGO	66	57	70	52	61	2	0.00	-0.41	0.00	0.31	26	10.66	232	83	67	0	0	0	0
	SAN FRANCISCO	63	52	69	48	58	4	0.12	-0.58	0.12	0.66	30	22.54	232	93	72	0	0	1	0
CO	ALAMOSA	47	19	55	1	33	0	0.14	0.03	0.13	0.20	67	0.23	27	91	33	0	7	2	0
	CO SPRINGS	44	25	60	14	34	-3	1.62	1.40	1.50	1.62	270	1.99	155	90	52	0	5	2	1
	DENVER	48	26	58	16	37	-3	0.37	0.07	0.37	1.06	132	1.33	72	91	44	0	7	1	0
	GRAND JUNCTION	54	29	66	23	42	-2	0.66	0.44	0.35	0.90	148	1.86	112	72	37	0	8	2	0
	PUEBLO	48	25	63	17	36	-8	1.77	1.58	1.31	1.79	358	2.06	184	95	54	0	5	3	1
CT	BRIDGEPORT	40	32	44	26	36	-3	0.55	-0.31	0.31	3.27	131	11.90	136	84	63	0	4	5	0
	HARTFORD	40	28	48	21	34	-4	1.47	0.64	1.17	4.52	187	11.01	122	89	63	0	5	5	1
DC	WASHINGTON	46	37	59	32	41	-6	3.24	2.52	1.31	5.61	261	18.25	214	81	61	0	1	5	3
DE	WILMINGTON	44	33	48	26	39	-5	2.55	1.77	1.04	4.90	213	12.64	153	87	63	0	4	4	2
FL	DAYTONA BEACH	74	55	81	43	64	0	2.07	1.42	0.92	3.98	189	15.44	196	94	57	0	0	3	3
	JACKSONVILLE	72	53	80	42	62	1	1.31	0.48	0.88	2.68	103	17.28	176	95	57	0	0	2	1
	KEY WEST	78	69	82	63	73	-1	1.25	0.86	1.11	2.81	240	10.11	202	88	69	0	0	2	1
	MIAMI	76	66	84	61	72	0	2.27	1.72	1.56	3.90	242	11.54	202	87	64	0	0	3	2
	ORLANDO	75	57	81	46	66	-1	2.53	1.80	2.08	5.00	217	15.72	206	93	57	0	0	3	1
	TAMPA	76	59	81	49	67	0	4.27	3.59	3.18	5.18	234	20.64	284	90	66	0	0	3	2
	VALPARAISO/EGLIN	67	53	73	41	60	2	0.44	-0.75	0.32	5.58	151	23.16	191	90	59	0	0	1	0
	WEST PALM BEACH	78	65	85	58	71	1	1.69	0.84	1.26	4.03	160	21.43	268	81	59	0	0	3	1
GA	ATHENS	58	41	72	38	50	-5	0.45	-0.81	0.41	4.98	132	18.56	145	91	59	0	0	4	0
	ATLANTA	57	41	68	37	49	-5	0.10	-1.22	0.04	6.16	155	19.17	142	91	63	0	0	3	0
	AUGUSTA	65	43	75	39	54	-2	0.80	-0.26	0.76	6.10	188	19.97	173	93	54	0	0	2	1
	COLUMBUS	66	46	76	41	56	-2	0.37	-0.95	0.15	4.61	116	12.05	90	90	52	0	0	3	0
	MACON	65	45	74	41	55	-3	0.82	-0.27	0.82	4.23	127	16.17	128	91	53	0	0	1	1
	SAVANNAH	68	50	80	44	59	-1	1.72	0.86	1.62	4.06	157	18.44	196	96	64	0	0	3	1
HI	HILO	81	66	83	63	73	1	0.12	-3.10	0.07	0.93	10	3.38	12	91	64	0	0	4	0
	HONOLULU	84	68	88	65	76	2	0.00	-0.50	0.00	0.00	0	0.98	13	81	47	0	0	0	0
	KAHULUI	83	65	84	60	74	1	0.00	-0.62	0.00	0.00	0	0.86	10	86	52	0	0	0	0
	LIHUE	79	65	83	63	72	-1	0.02	-0.94	0.02	0.02	1	3.95	33	87	60	0	0	1	0
ID	BOISE	58	35	65	27	46	3	0.07	-0.23	0.07	0.54	82	4.67	139	71	33	0	3	1	0
	LEWISTON	57	37	64	31	47	3	0.03	-0.22	0.02	1.16	161	3.26	112	77	41	0	1	2	0
	POCATELLO	52	27	61	21	39	2	0.00	-0.30	0.00	0.29	35	3.71	132	85	40	0	5	0	0
IL	CHICAGO/O'HARE	40	31	52	22	35	-3	0.70	0.07	0.47	3.63	217	8.01	175	87	68	0	3	3	0
	MOLINE	41	30	49	24	36	-3	1.43	0.73	1.26	2.66	143	6.35	160	88	67	0	5	3	1
	PEORIA	43	31	52	22	37	-3	1.83	1.14	1.61	3.62	198	8.81	186	90	71	0	4	2	1
	ROCKFORD	40	28	48	19	34	-2	0.57	-0.01	0.32	1.64	109	5.57	141	88	61	0	8	4	0
	SPRINGFIELD	44	33	53	23	38	-3	1.70	0.94	1.10	3.09	148	8.22	153	92	75	0	4	4	1
IN	EVANSVILLE	54	37	69	23	45	-1	1.57	0.47	0.74	2.36	74	7.31	82	90	62	0	1	5	1
	FORT WAYNE	43	30	60	21	36	-2	2.05	1.38	1.18	3.95	210	9.35	165	93	70	0	5	4	1
	INDIANAPOLIS	47	35	63	20	41	-1	2.98	2.10	1.17	4.44	178	8.19	112	92	68	0	3	5	3
	SOUTH BEND	42	29	55	15	35	-3	0.80	-0.12	0.41	2.31	117	7.81	128	92	67	0	5	2	0
IA	BURLINGTON	43	32	51	24	38	-2	1.22	0.54	1.17	2.90	163	8.28	196	83	62	0	3	3	1
	CEDAR RAPIDS	38	28	47	20	33	-3	0.79	0.24	0.50	1.59	111	4.90	142	93	64	0	6	3	1
	DES MOINES	37	28	48	22	32	-6	0.80	0.06	0.53	1.87	132	4.44	127	89	66	0	8	3	1
	DUBUQUE	35	27	43	19	31	-4	0.63	-0.06	0.31	1.65	91	5.64	128	90	68	0	8	4	0
	SIOUX CITY	37	27	47	20	32	-5	0.52	0.06	0.47	1.23	88	2.51	94	92	67	0	7	2	0
	WATERLOO	36	27	46	21	32	-4	0.49	-0.05	0.26	1.02	71	3.67	111	94	76	0	6	2	0
KS	CONCORDIA	39	29	61	24	34	-8	0.60	0.08	0.31	0.92	64	3.29	120	92	73	0	7	4	0
	DODGE CITY	36	28	53	22	33	-11	1.53	1.16	0.86	2.24	229	3.33	159	94	80	0	7	5	2
	GOODLAND	44	25	62	18	34	-5	0.05	-0.23	0.03	0.15	19	0.90	59	93	63	0	7	2	0
	TOPEKA	41	31	56	25	36	-8	1.03	0.46	0.67	2.12	136	3.68	104	92	66	0	4	3	1

Based on 1961-90 normals

Weather Data for the Week Ending March 21, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	42	32	49	24	37	-9	3.15	2.58	1.63	3.60	228	4.94	147	93	76	0	3	4	2
KY	JACKSON	56	39	68	26	47	-1	1.23	0.13	0.57	2.56	79	10.75	99	80	53	0	3	4	1
	LEXINGTON	54	38	66	22	46	0	1.30	0.28	1.00	2.74	93	9.31	103	87	59	0	2	5	1
	LOUISVILLE	55	40	67	26	48	1	2.20	1.13	1.28	3.59	114	11.86	127	86	60	0	1	6	1
	PADUCAH	53	39	64	33	46	-2	2.07	0.94	1.10	2.86	87	10.66	102	94	71	0	0	6	1
LA	BATON ROUGE	70	50	79	40	60	-2	1.97	0.90	1.89	3.67	113	24.20	176	88	54	0	0	4	1
	LAKE CHARLES	71	51	80	39	61	0	1.75	1.01	1.71	3.80	167	18.94	183	94	55	0	0	4	1
	NEW ORLEANS	69	54	75	45	62	-1	2.49	1.40	1.14	5.79	169	29.36	202	86	61	0	0	3	2
	SHREVEPORT	66	46	77	34	56	-2	2.09	1.29	2.08	2.26	92	15.29	149	92	47	0	0	2	1
ME	CARIBOU	32	12	41	5	22	-4	0.19	-0.36	0.17	2.08	129	8.76	147	82	45	0	7	2	0
	PORTLAND	37	25	43	19	31	-3	0.40	-0.43	0.31	2.82	116	13.37	144	87	60	0	6	2	0
MD	BALTIMORE	47	33	58	23	40	-5	2.87	2.10	0.85	7.46	323	19.51	229	86	61	0	3	5	4
MA	BOSTON	38	31	41	27	34	-5	1.24	0.41	1.07	3.67	148	13.98	144	87	69	0	5	3	1
	WORCESTER	34	26	40	22	30	-4	1.59	0.68	1.11	5.80	219	13.55	138	86	68	0	7	4	1
MI	ALPENA	31	10	36	-10	21	-8	1.50	1.01	0.86	3.70	270	8.24	192	88	63	0	7	2	2
	GRAND RAPIDS	34	23	41	9	29	-6	0.64	0.03	0.31	3.51	213	9.14	186	88	62	0	6	3	0
	HOUGHTON LAKE	33	14	39	-9	23	-6	0.68	0.21	0.44	2.07	158	5.07	127	86	55	0	7	3	0
	LANSING	34	22	42	4	28	-6	0.66	0.12	0.39	2.71	184	8.20	190	89	68	0	6	3	0
	MARQUETTE	29	2	32	-16	16	-9	0.40	-0.23	0.40	2.84	164	6.69	119	92	50	0	7	3	0
	MUSKEGON	36	23	44	9	30	-4	0.96	0.36	0.46	2.28	142	6.62	122	87	56	0	6	3	0
MN	DULUTH	30	17	35	10	23	-2	0.00	-0.45	0.00	0.18	15	4.63	143	88	56	0	7	0	0
	INT'L FALLS	37	18	41	6	27	3	0.00	-0.25	0.00	0.19	29	1.90	87	71	36	0	7	0	0
	MINNEAPOLIS	38	23	45	16	31	-1	0.07	-0.39	0.06	0.30	24	2.74	90	84	49	0	7	2	0
	ROCHESTER	32	23	36	19	27	-3	0.24	-0.18	0.14	0.39	36	3.24	124	87	64	0	7	4	0
	ST. CLOUD	36	22	45	17	30	2	0.10	-0.23	0.07	0.40	47	1.98	89	84	44	0	7	2	0
MS	JACKSON	68	48	78	33	58	1	1.82	0.48	0.94	4.21	108	19.24	139	86	53	0	0	4	2
	MERIDIAN	67	48	74	34	57	0	0.84	-0.70	0.76	3.16	69	22.14	146	91	61	0	0	4	1
	TUPELO	63	46	75	32	54	0	1.16	-0.26	0.75	4.55	111	16.72	122	91	60	0	1	6	1
MO	COLUMBIA	43	32	55	26	38	-6	1.85	1.11	0.79	3.46	170	9.18	172	91	73	0	3	5	2
	KANSAS CITY	41	32	56	27	37	-7	0.84	0.25	0.53	2.22	139	4.26	113	86	68	0	2	4	1
	SAINT LOUIS	46	35	57	26	41	-5	3.04	2.20	0.98	4.53	192	10.34	165	90	70	0	2	4	3
	SPRINGFIELD	45	35	54	27	40	-7	3.83	2.92	1.91	5.31	210	12.25	169	100	76	0	3	6	3
MT	BILLINGS	49	31	59	26	40	4	0.20	-0.07	0.09	0.68	94	1.48	66	92	47	0	5	4	0
	BUTTE	47	21	56	11	34	5	0.11	-0.07	0.11	0.62	127	1.92	135	93	41	0	7	1	0
	GLASGOW	40	24	48	17	32	2	0.15	0.06	0.11	0.27	123	0.66	79	95	63	0	7	2	0
	GREAT FALLS	46	23	59	12	35	1	0.50	0.24	0.41	0.91	130	2.08	96	88	43	0	7	3	0
	KALISPELL	46	27	58	20	36	2	0.24	0.02	0.12	1.60	239	2.92	88	92	49	0	7	3	0
	MILES CITY	42	27	62	23	35	1	0.14	0.00	0.07	0.32	86	0.94	69	97	66	0	7	3	0
	MISSOULA	50	29	59	21	39	3	0.24	0.02	0.23	0.69	105	2.46	91	86	44	0	5	2	0
NE	GRAND ISLAND	40	27	56	23	33	-5	0.16	-0.30	0.13	0.25	21	1.12	47	92	74	0	7	2	0
	LINCOLN	37	27	50	21	32	-6	0.57	0.07	0.47	2.14	163	4.14	162	92	73	0	7	3	0
	NORFOLK	36	25	49	18	30	-6	0.22	-0.22	0.22	0.78	66	1.29	52	92	69	0	7	1	0
	NORTH PLATTE	42	25	62	18	34	-3	0.06	-0.24	0.04	0.24	33	0.91	59	93	65	0	7	2	0
	OMAHA	36	28	49	18	33	-7	0.42	-0.06	0.37	1.99	153	3.59	128	92	72	0	6	2	1
	SCOTTSBLUFF	50	27	61	23	38	2	0.07	-0.19	0.07	0.66	97	1.50	92	93	48	0	6	1	0
	VALENTINE	40	24	54	18	32	-2	0.06	-0.19	0.03	0.36	56	0.54	41	94	66	0	7	2	0
NV	ELY	52	24	60	19	38	3	0.00	-0.22	0.00	0.11	17	2.22	110	83	30	0	7	0	0
	LAS VEGAS	72	49	78	45	60	4	0.00	-0.09	0.00	0.14	45	3.20	258	58	21	0	0	0	0
	RENO	64	30	69	24	47	4	0.02	-0.14	0.02	0.59	113	4.27	164	78	24	0	4	1	0
	WINNEMUCCA	59	24	67	14	42	1	0.06	-0.12	0.06	0.21	41	3.48	185	88	30	0	6	1	0
NH	CONCORD	38	24	43	14	31	-2	0.70	0.09	0.60	3.08	169	9.17	133	87	58	0	6	3	1
NJ	NEWARK	44	33	49	27	38	-5	2.14	1.25	1.37	3.98	154	13.67	152	87	66	0	4	3	1
NM	ALBUQUERQUE	55	36	66	29	45	-2	2.01	1.90	1.45	2.24	679	3.04	241	82	36	0	1	4	1
NY	ALBANY	39	26	47	20	33	-2	0.52	-0.15	0.39	2.08	107	8.47	129	89	64	0	5	2	0
	BINGHAMTON	36	24	43	14	30	-3	1.71	1.06	1.21	3.15	169	10.74	163	96	68	0	5	5	1
	BUFFALO	36	25	44	11	30	-4	1.45	0.84	0.85	3.27	184	11.15	164	94	69	0	5	5	1
	ROCHESTER	36	24	44	13	30	-5	1.54	1.02	0.79	3.10	210	11.01	195	96	70	0	5	5	1
	SYRACUSE	38	25	44	12	31	-4	1.37	0.73	1.03	2.74	152	10.85	169	94	65	0	6	5	1
NC	ASHEVILLE	52	36	70	32	44	-4	1.80	0.74	0.86	3.63	113	19.98	193	94	58	0	1	6	2
	CHARLOTTE	58	42	75	38	50	-2	0.88	-0.16	0.61	3.01	97	12.57	118	87	55	0	0	5	1
	GREENSBORO	53	39	70	34	46	-4	1.63	0.78	0.50	3.62	141	14.89	164	87	58	0	0	6	1
	HATTERAS	55	47	60	40	51	-1	1.58	0.60	1.42	2.15	72	19.61	159	95	74	0	0	5	1
	RALEIGH	58	40	69	32	49	-3	4.87	4.01	2.14	7.38	277	20.65	210	90	63	0	1	5	3
	WILMINGTON	66	46	73	37	56	1	1.30	0.42	0.93	2.14	79	20.64	201	90	58	0	0	4	1
ND	BISMARCK	35	25	43	15	30	1	0.02	-0.16	0.02	0.14	32	1.89	140	93	74	0	7	1	0
	DICKINSON	33	21	40	13	27	-3	0.02	-0.14	0.02	0.19	50	2.57	236	95	83	0	7	1	0
	FARGO	37	26	42	20	32	5	0.04	-0.21	0.04	0.10	16	2.40	135	88	66	0	7	1	0
	GRAND FORKS	35	23	40	8	29	4	0.49	0.27	0.49	0.49	83	2.43	137	93	72	0	7	1	0
	JAMESTOWN	35	24	43	16	30	2	0.16	-0.04	0.14	0.36	69	2.35	147	95	71	0	7	2	0
	WILLISTON	33	22	37	13	27	-2	0.00	-0.16	0.00	0.20	49	2.31	166	93	78	0	7	0	0
OH	AKRON-CANTON	44	30	58	19	37	-2	0.71	-0.06	0.30	2.33	105	8.54	129	91	65	0	4	6	0
	CINCINNATI	50	37	62	22	43	-1	1.62	0.63	0.67	3.24	114	9.55	118	90	63	0	3	6	1
	CLEVELAND	42	32	56	22	37	-1	1.48	0.81	0.98	2.91	152	8.74	142	90	69	0	4	6	1
	COLUMBUS	46	35	61	24	41	0	0.97	0.21	0.37	1.89	87	6.66	101	87	58	0	3	4	0
	DAYTON	46	34	59	21	40	-1	1.28	0.48	0.54	2.36	104	7.97	122	91	61	0	3	5	1
	MANSFIELD	42	30	55	20	36	-2	1.19	0.42	0.62	2.02	94	7.48	122	95	72	0	5	4	1

Based on 1961-90 normals

Weather Data for the Week Ending March 21, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	40	29	51	20	35	-2	1.01	0.39	0.47	2.64	153	9.37	180	93	65	0	5	4	0
	YOUNGSTOWN	46	30	56	17	37	0	0.82	0.10	0.33	2.43	118	9.17	147	91	66	0	4	6	0
OK	OKLAHOMA CITY	62	39	68	30	45	-6	3.96	3.33	1.73	5.17	287	9.38	209	94	68	0	1	5	3
	TULSA	62	38	68	28	45	-6	3.57	2.76	1.35	6.32	278	10.09	175	94	67	0	1	5	3
OR	ASTORIA	58	43	66	37	50	4	0.65	-0.96	0.61	6.08	123	32.60	146	95	64	0	0	3	1
	BURNS	55	28	64	20	41	4	0.19	-0.06	0.18	0.67	94	5.89	239	88	37	0	6	3	0
	EUGENE	59	38	68	32	49	1	1.24	-0.02	1.14	2.76	71	17.05	98	89	56	0	1	3	1
	MEDFORD	67	41	74	33	54	7	0.24	-0.17	0.16	0.96	74	9.02	153	87	38	0	0	2	0
	PENDLETON	58	38	64	31	48	3	0.03	-0.25	0.03	0.64	78	4.43	128	83	42	0	2	1	0
	PORTLAND	62	43	70	37	52	5	0.54	-0.27	0.44	2.44	98	14.48	124	90	47	0	0	4	0
	SALEM	60	40	68	36	50	4	0.93	-0.01	0.92	2.78	94	18.00	135	93	52	0	0	2	1
PA	ALLENTOWN	44	30	50	21	37	-3	1.66	0.92	0.65	3.77	172	11.04	133	85	58	0	4	5	2
	ERIE	40	29	51	20	35	-2	0.67	-0.02	0.24	1.45	74	8.08	125	92	76	0	4	5	0
	MIDDLETOWN	48	32	70	24	40	-2	2.16	1.42	0.70	4.32	189	13.86	172	86	59	0	3	4	3
	PHILADELPHIA	45	34	48	28	40	-3	2.14	1.34	1.20	3.91	171	11.41	137	87	62	0	3	4	2
	PITTSBURGH	49	33	61	21	41	1	1.00	0.20	0.62	1.93	86	8.11	113	91	62	0	4	5	1
	SCRANTON	43	29	56	22	36	-1	1.27	0.71	0.86	2.47	147	8.34	141	90	61	0	2	4	1
	WILLIAMSPORT	44	30	53	19	37	-2	1.44	0.72	1.02	2.77	130	13.30	179	88	60	0	3	5	1
RI	PROVIDENCE	40	30	45	24	35	-3	2.67	1.74	2.23	6.35	234	18.74	184	87	61	0	5	3	1
SC	BEAUFORT	64	48	72	45	56	-3	0.42	-0.53	0.33	2.48	87	18.73	190	94	69	0	0	3	0
	CHARLESTON	66	48	74	40	57	-2	3.16	2.15	1.93	5.51	182	23.26	239	92	63	0	0	3	2
	COLUMBIA	62	43	75	38	52	-4	1.75	0.64	1.59	4.25	127	17.41	146	91	52	0	0	2	1
	GREENVILLE	58	39	73	36	48	-5	0.74	-0.50	0.54	3.94	108	17.65	144	89	55	0	0	5	1
SD	ABERDEEN	36	26	46	18	30	0	0.02	-0.30	0.02	0.16	20	1.56	95	91	70	0	7	1	0
	HURON	38	26	49	20	32	-1	0.00	-0.39	0.00	0.15	14	1.10	52	88	64	0	7	0	0
	RAPID CITY	46	25	66	16	35	1	0.17	-0.07	0.15	0.47	76	1.11	74	92	56	0	7	2	0
	SIOUX FALLS	36	25	44	20	30	-3	0.29	-0.10	0.24	0.83	83	1.99	93	92	68	0	7	2	0
TN	BRISTOL	54	37	64	24	45	-3	2.49	1.65	1.25	3.81	150	11.06	120	94	58	0	1	5	2
	CHATTANOOGA	56	43	68	36	49	-2	2.63	1.24	1.92	6.44	156	18.99	137	94	67	0	0	5	2
	KNOXVILLE	56	41	68	33	48	-1	2.66	1.68	1.50	4.46	127	11.78	100	89	57	0	0	4	2
	MEMPHIS	60	45	70	36	53	-1	1.79	0.55	0.91	4.46	124	16.75	143	94	62	0	0	6	2
	NASHVILLE	56	43	69	34	49	-2	1.01	-0.11	0.56	2.26	69	10.05	94	88	65	0	0	6	1
TX	ABILENE	61	40	77	28	51	-6	2.36	2.08	1.32	2.95	339	4.80	157	90	51	0	1	3	2
	AMARILLO	47	30	63	27	39	-9	2.15	1.93	1.33	2.26	348	5.02	287	97	71	0	5	3	1
	AUSTIN	71	50	80	42	60	-2	1.39	0.98	1.18	1.96	156	7.89	154	81	42	0	0	2	1
	BEAUMONT	70	52	79	39	61	-1	1.40	0.68	1.38	4.48	203	18.34	177	94	58	0	0	2	1
	BROWNSVILLE	78	59	86	50	68	-1	0.29	0.17	0.27	0.62	194	2.71	92	93	48	0	0	2	0
	CORPUS CHRISTI	73	55	78	44	64	-2	0.64	0.45	0.59	2.49	377	6.20	144	94	55	0	0	2	1
	DEL RIO	75	47	83	41	61	-3	1.86	1.73	0.98	1.92	505	2.31	122	84	29	0	0	2	2
	EL PASO	66	42	71	37	54	-2	0.12	0.06	0.12	0.17	81	0.36	35	68	30	0	0	1	0
	FORT WORTH	63	45	78	34	54	-3	2.93	2.29	1.33	3.97	219	12.25	210	88	57	0	0	4	2
	GALVESTON	68	54	76	44	61	-1	1.32	0.83	1.28	1.43	96	11.88	169	93	63	0	0	4	1
	HOUSTON	71	49	79	37	60	-1	1.56	0.90	1.51	2.09	106	12.30	149	95	51	0	0	3	1
	LUBBOCK	55	34	68	28	44	-8	1.16	0.97	1.00	1.29	222	3.15	192	92	55	0	4	2	1
	MIDLAND	64	38	76	29	51	-5	0.42	0.28	0.38	0.44	107	1.17	82	85	37	0	1	3	0
	SAN ANGELO	64	40	77	29	52	-7	1.70	1.51	1.01	1.81	312	3.04	124	91	45	0	2	5	2
	SAN ANTONIO	72	48	78	38	60	-3	1.70	1.37	1.23	2.80	283	9.41	208	88	41	0	0	3	1
	VICTORIA	72	50	78	39	61	-3	1.24	0.91	1.18	2.02	196	7.02	136	95	50	0	0	2	1
	WACO	66	46	79	36	56	-3	1.60	1.07	1.04	2.00	131	12.18	231	91	54	0	0	4	1
	WICHITA FALLS	56	40	71	29	48	-6	2.56	2.06	1.53	2.74	194	7.49	192	92	61	0	1	5	2
UT	SALT LAKE CITY	54	32	63	28	43	1	0.13	-0.31	0.13	1.22	98	7.74	215	84	40	0	4	1	0
VT	BURLINGTON	35	22	43	9	29	-3	0.96	0.45	0.60	2.99	208	9.98	205	91	64	0	6	5	1
VA	LYNCHBURG	49	36	70	29	43	-4	1.33	0.53	0.78	3.94	166	17.87	216	73	50	0	1	4	1
	NORFOLK	53	43	66	39	48	-1	2.47	1.63	1.06	4.23	186	18.45	189	89	66	0	0	5	1
	RICHMOND	49	36	61	27	43	-6	3.71	2.88	1.62	6.72	271	19.34	218	86	70	0	2	5	3
	ROANOKE	50	36	71	29	43	-5	4.07	3.27	3.09	5.22	220	21.18	264	89	53	0	3	6	2
	WASH/DULLES	47	33	63	24	40	-4	3.87	3.15	1.80	5.68	255	16.91	221	89	63	0	3	5	2
WA	HANFORD	64	40	69	29	52	–	0.00	–	0.00	0.14	47	2.53	148	63	27	0	1	0	0
	OLYMPIA	59	36	67	29	47	3	0.31	-0.80	0.29	3.16	91	20.19	117	99	49	0	2	2	0
	QUILLAYUTE	57	40	65	33	48	5	0.84	-1.74	0.59	4.58	57	35.51	101	95	59	0	0	3	1
	SEATTLE-TACOMA	57	41	63	36	49	3	0.29	-0.51	0.17	2.39	96	12.83	108	93	52	0	0	4	0
	SPOKANE	54	34	61	29	44	5	0.08	-0.25	0.04	0.67	64	4.31	98	89	43	0	3	3	0
	YAKIMA	60	34	66	25	47	4	0.08	-0.09	0.06	0.20	43	4.00	165	81	38	0	2	1	0
WV	BECKLEY	48	33	62	22	40	-3	2.62	1.85	1.44	3.77	166	13.55	166	96	67	0	4	6	2
	CHARLESTON	52	37	65	26	45	-2	1.88	1.05	0.89	3.43	139	11.10	132	88	62	0	3	4	2
	ELKINS	49	30	61	19	40	0	2.35	1.47	0.99	3.20	125	10.01	116	90	64	0	4	5	3
	HUNTINGTON	55	39	68	24	47	0	0.84	-0.01	0.37	1.99	80	10.80	129	86	57	0	1	3	0
WI	EAU CLAIRE	38	20	46	11	29	-1	0.51	0.10	0.47	1.03	101	4.96	181	93	50	0	7	3	0
	GREEN BAY	33	21	36	9	27	-4	0.85	0.37	0.59	1.58	121	4.57	131	86	63	0	7	3	1
	MADISON	34	22	41	8	28	-5	0.83	0.32	0.40	1.91	140	5.80	160	89	69	0	6	4	0
	MILWAUKEE	35	28	39	18	31	-3	0.98	0.36	0.46	1.90	114	7.69	163	87	69	0	6	3	0
WY	CASPER	45	25	56	19	35	1	0.05	-0.17	0.03	0.09	16	1.14	98	88	48	0	7	2	0
	CHEYENNE	44	23	53	14	33	0	0.24	0.00	0.18	0.44	68	0.81	57	89	53	0	7	4	0
	LANDER	40	20	52	12	30	-5	0.78	0.52	0.54	0.87	126	1.57	90	89	54	0	7	2	1
	SHERIDAN	48	27	62	20	37	3	0.27	0.06	0.16	0.44	75	0.93	47	93	51	0	7	3	0

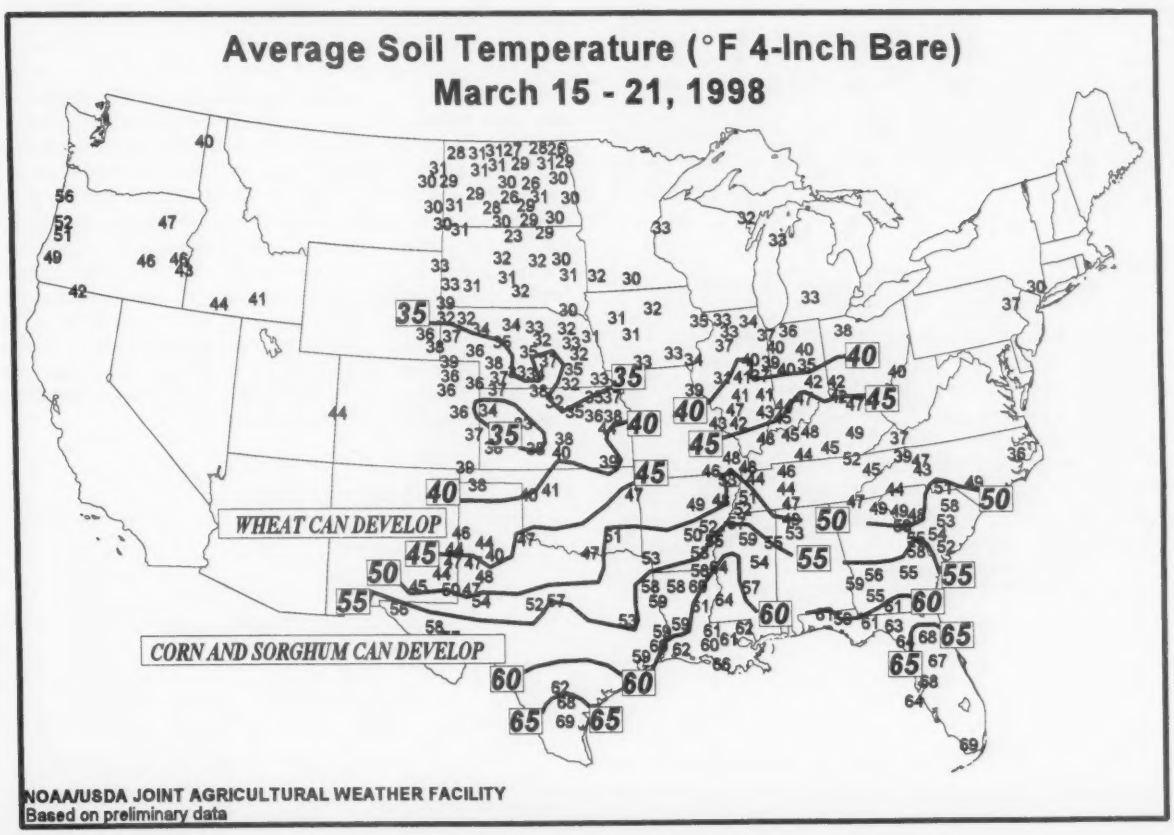
NOTE: These data are preliminary and subject to change. In the past, precipitation totals from a number of stations have been incomplete.

National Agricultural Summary

March 16 - 22, 1998

HIGHLIGHTS

Planting, spring tillage, and crop development were slowed by a powerful storm that brought snow and below-normal temperatures to an area extending from the southern Plains to New England. The storm slowed development of the winter wheat crop, especially in Kansas where jointing is behind normal. Farther south, development was not as affected. In Oklahoma, the crop was jointing ahead of normal, and in Texas the crop continued to head out. The winter wheat condition remained mostly good. As the storm proceeded eastward, it dropped heavy rainfall on the already saturated Southeastern States, further delaying field preparation and planting. Storm-related tillage delays were not as severe in Texas. However, recently planted crops were germinating slowly and some emerged corn and cotton fields were showing stress due to low temperatures. In the western Corn Belt and northern Plains, temperatures were mostly normal and precipitation was light. Warmer weather in Florida helped vegetable plant growth, but citrus bloom development remained slow. California and the Pacific Northwest experienced warm, dry weather most of the week, allowing field preparation and planting to resume a normal pace. The sunny weather also allowed growers to work in orchards and vineyards. Some cotton was planted in the San Joaquin Valley, but soil temperatures were still too low in most areas. Warm weather aided spring vegetables. Early varieties of almonds, stone fruit, and grapes were developing leaves, while later varieties were in bloom.


Average Soil Temperature (°F 4-Inch Bare)
March 15 - 21, 1998
WHEAT CAN DEVELOP
CORN AND SORGHUM CAN DEVELOP
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary data

International Weather and Crop Summary

March 15 - 21, 1998

HIGHLIGHTS

FSU-WESTERN: Unseasonably cold, snowy weather kept winter grains dormant and prevented early-season fieldwork for spring grain planting.

EUROPE: Mild, dry weather favored developing winter grains in the west, while unseasonably cold weather in the east slowed further growth of winter grains.

NORTHWESTERN AFRICA: A developing drought in Morocco worsened conditions for winter grains in the heading stage.

AUSTRALIA: Conditions were favorable for maturing cotton and sorghum.

SOUTH AFRICA: Warmer, drier weather helped the development of late-planted corn.

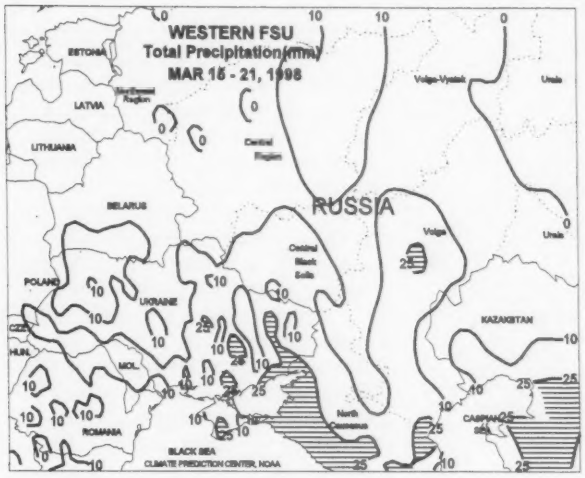
SOUTHEAST ASIA: Showers continued to benefit main-season rice in Java, but drought persisted across the eastern Philippines and eastern Malaysia.

EASTERN ASIA: Freezing temperatures burned back vegetative winter wheat in the North China Plain and raised concerns for winter wheat across the Yangtze Valley.

SOUTH AMERICA: In Rio Grande do Sul, Brazil, heavy showers slowed harvesting and increased disease problems for soybeans. Drier weather favored summer crop harvesting in central Argentina.

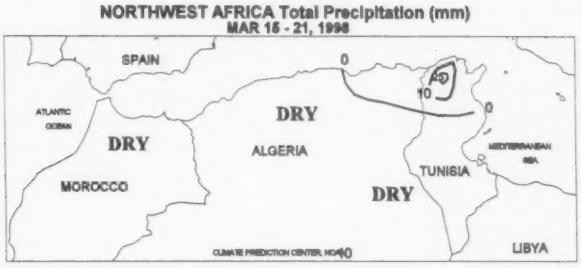
EUROPE

Unseasonably mild weather returned to most of western Europe, promoting rapid growth and development of winter grains. Furthermore, mostly dry weather accompanied the mild weather in these areas, favoring spring grain and summer crop planting. In Spain, dry weather has persisted in central and southern areas since February 10, lowering topsoil moisture. Rain is needed for winter wheat, approaching the heading stage in the south, and for the early development of spring-sown crops. Farther east, unseasonably cold weather prevailed over eastern Europe, where weekly temperatures averaged 2 to 5 degrees C below normal. The cold weather slowed further greening of winter grains. Extreme minimum temperatures in the region ranged from -4 to -10 degrees C, with lowest temperatures (less than -10 degrees C) observed in northeastern Poland and higher elevations in central Romania. Light rain and snow (3-10 mm) fell intermittently during the week in eastern Europe, preventing early-season fieldwork for spring grain planting.



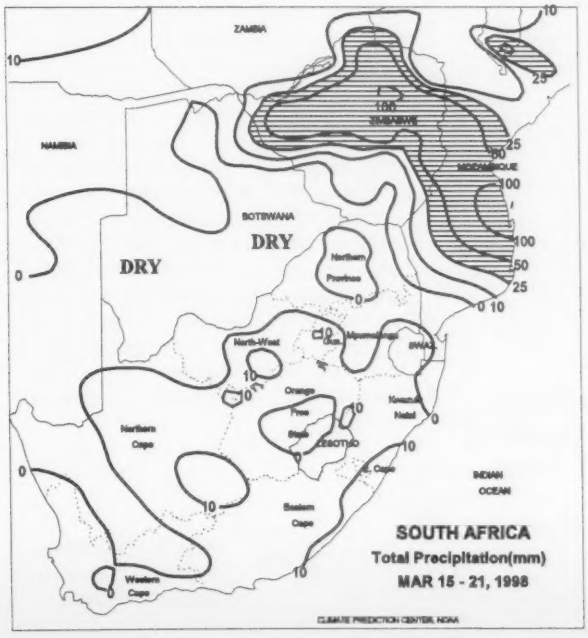
FSU-WESTERN

Unseasonably cold weather prevailed over most of the region, keeping winter grains dormant. Weekly temperatures averaged 1 to 3 degrees C below normal in most areas. Typically, winter grains begin breaking dormancy in early April in Ukraine and southern areas in Russia (southern Black Soils Region, lower Volga Valley, and the North Caucasus). Snow accompanied the colder weather in most areas. By week's end, snow cover extended as far south as the Black Sea coast. The cold, wet weather pattern halted early-spring grain planting in southern Ukraine and the North Caucasus region in Russia.



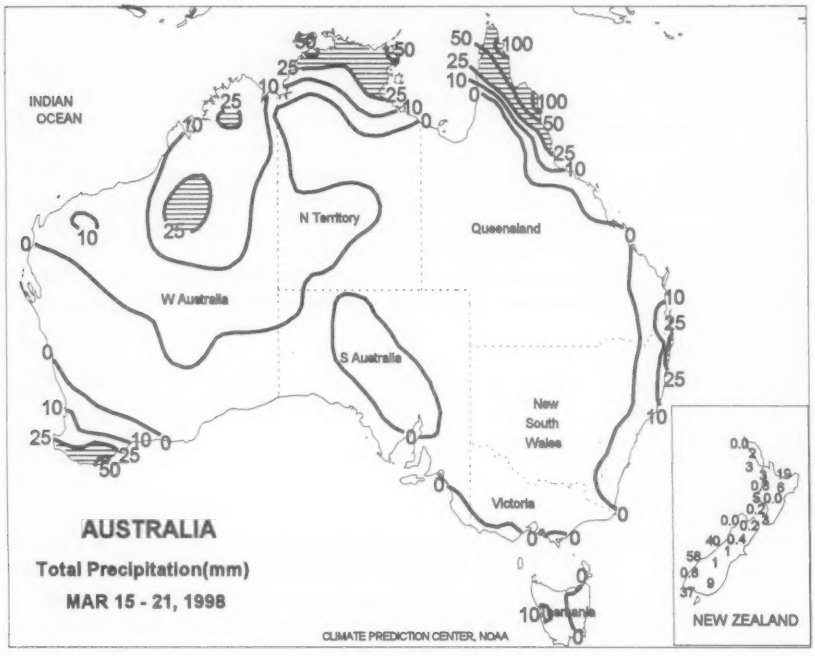
NORTHWESTERN AFRICA

Winter grains were in or nearing the heading stage throughout most of the region. The sixth consecutive week of dry weather prevailed over winter grain areas in Morocco, worsening conditions for winter grains in the heading stage. Rain is needed soon to prevent further declines in crop conditions. Farther east, drought continued in winter grain areas of western and central Algeria, causing further declines in crop conditions. Dry weather returned to winter grain areas in eastern Algeria, while light showers (7-25 mm) dampened crop areas in Tunisia. Moisture reserves remain limited for crop growth in these areas, and additional moisture is needed to prevent the development of significant stress. Weekly temperatures averaged 1 to 3 degrees C above normal in Morocco and western Algeria, further increasing evaporation rates.



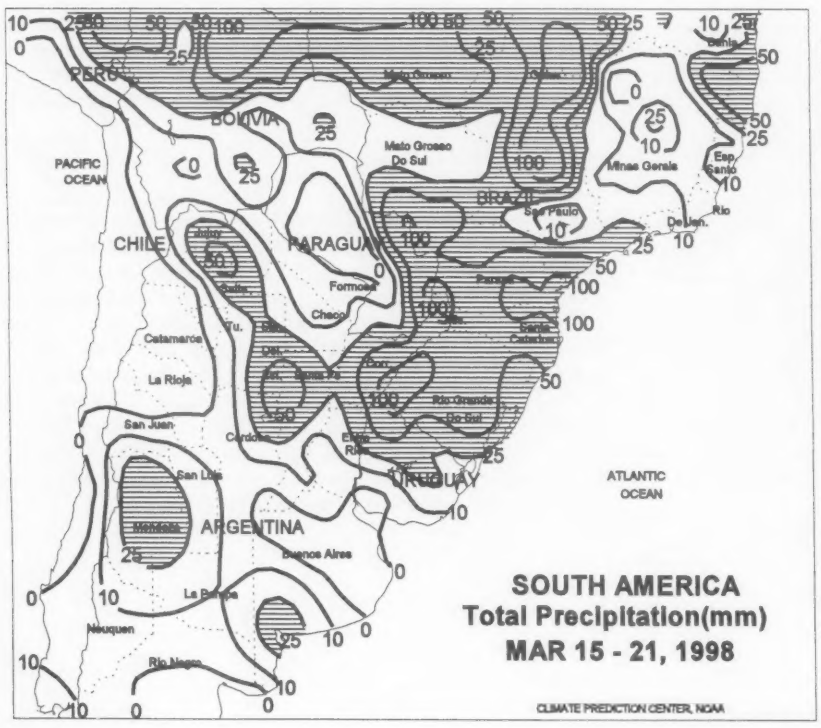
SOUTH AFRICA

Drier, warmer weather dominated the corn belt, aiding development of late-planted summer crops. Highs reached the low 30's in central and western sections of the corn belt, where much of the crop is developmentally behind schedule. The average date of the first autumn freeze is 4 to 5 weeks away in the traditionally cooler areas. Summer crop yield potential varies across the region, and weather conditions over the next few weeks will help determine the final outcome. Elsewhere, scattered, light showers (15 mm or less) lingered over agricultural regions of the coastal provinces, including Natal-Kwazulu's coastal sugarcane areas.



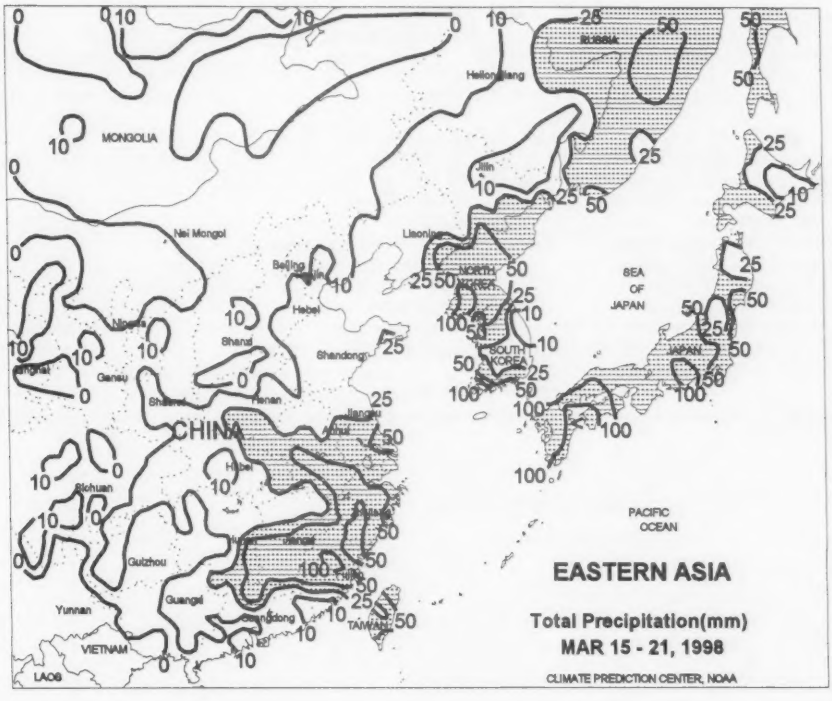
AUSTRALIA

Warm, dry weather continued to dominate the east, with temperatures averaging 3 to 5 degrees C above normal. Along the coast, tropical showers remained north of the main sugarcane areas as temperatures averaged near to above normal. While beneficial for maturing cotton and sorghum, conditions in recent weeks have been unfavorable for sugarcane, which is generally not harvested for a few more months. Warmer, drier weather returned to agricultural areas of Western Australia following last week's beneficial rain, although moderate rain (10-25 mm or more) redeveloped over southern crop areas by week's end. In New Zealand, rainfall was light (10 mm or less) in the main pasture lands.



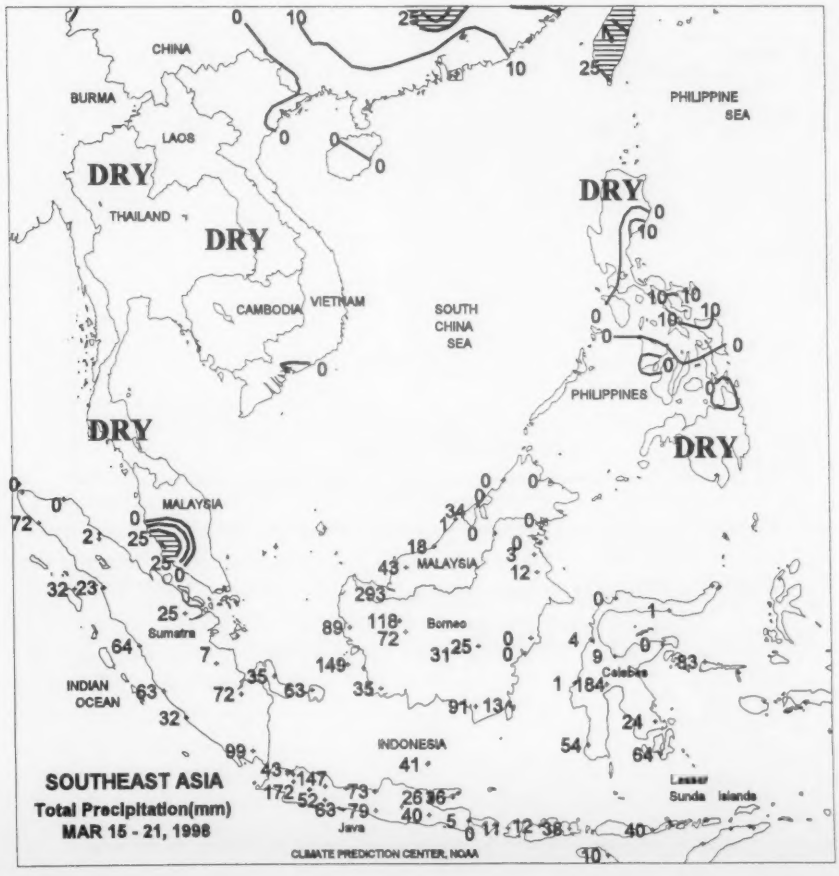
SOUTH AMERICA

Heavy showers (90-120 mm) again slowed early soybean harvesting in Rio Grande do Sul, Brazil. The excessive moisture during the past 2 weeks across the region has increased disease problems for maturing soybeans. Drier weather is needed to improve quality. Elsewhere in southern Brazil, moderate showers (25-80 mm) caused minor harvesting delays. According to reports as of March 12, Brazilian soybean harvesting was 14 percent complete compared with 21 percent last year. In northern Argentina, drier weather (5-20 mm) eased wetness and improved cotton quality. Scattered, light to moderate showers (5-40 mm) did not hamper summer crop harvesting across central Argentina. According to reports as of March 13, Argentine corn harvesting was 6 percent complete and sunflower harvesting was 40 percent complete.



EASTERN ASIA

Freezing temperatures (minimum temperatures -3 to 0 degrees C) on March 20 and 21 burned back vegetative winter wheat in the North China Plain. Farther south, the cold weather raised concerns for winter wheat nearing the heading stage across the Yangtze Valley (Hunan and southern Hubei eastward to Zhejiang). Historically, winter wheat in the Yangtze Valley accounts for less than 10 percent of the total production. Light rain (5-25 mm) covered the North China Plain, increasing moisture supplies for vegetative winter wheat. Light to moderate (10-50 mm) rain maintained moisture supplies for winter grains and oilseeds across the Yangtze Valley. Heavier showers (75-100 mm) slowed rice transplanting across extreme southeastern China (Jiangxi and Fujian).



SOUTHEAST ASIA

In Java and southern Sumatra, seasonably heavy showers (30-80 mm, with isolated amounts greater than 100 mm) continued to benefit main-season rice. Scattered, light showers (5-25 mm) brought little or no drought relief to the eastern Philippines and oil palm areas of eastern Malaysia (Sabah). Across Thailand, hot weather (temperatures averaged 2-5 degrees C above normal, with highs ranging from 40-42 degrees C) increased irrigated water use for second-season rice.

The *Weekly Weather and Crop Bulletin* (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the *Weekly Weather Chronicle*. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53rd Congress, 3rd Session. NOAA is responsible for managing, printing, and distributing the bulletin. The contents may be reprinted freely, with proper credit.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center
Managing Editor . . . . . ***Douglas Le Comte*** (202) 720-7919
fax (202) 720-1455
Editor . . . . . ***Brad Rippey*** (202) 720-1444
Meteorologists . . . . . ***Jeff Savadel and Brian Morris***
Special Requests . . . . . (202) 720-7917
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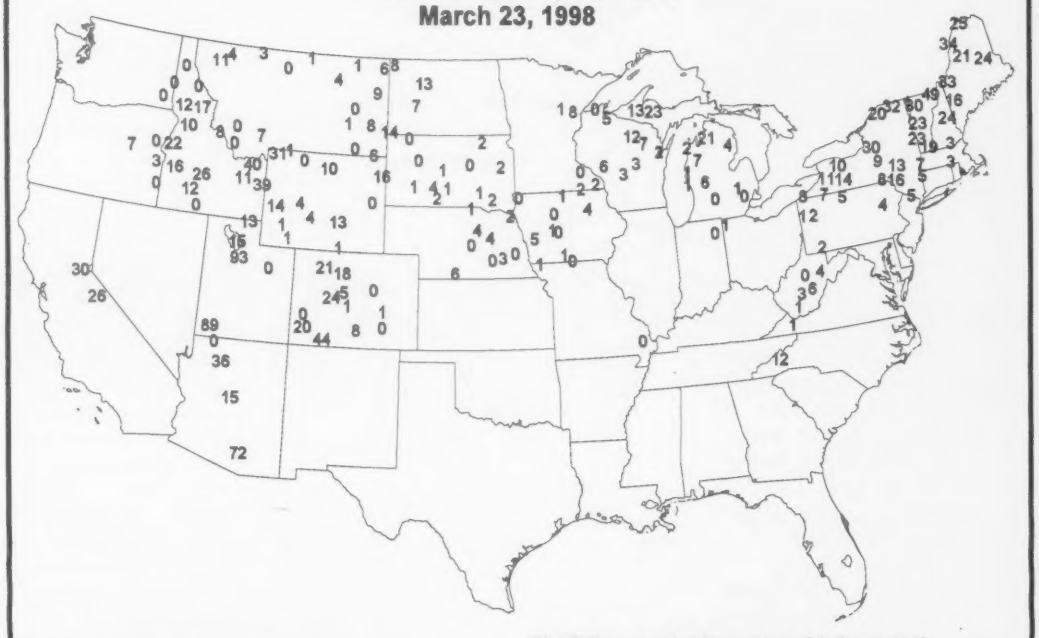
Snow Depth (Inches)
March 23, 1998



Experimental product based on preliminary data
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY

The NWS co-operative observer network is the principal source of the snow depth reports.

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Volume 85, No. 13 March 31, 1998

WEEKLY WEATHER AND CROP BULLETIN

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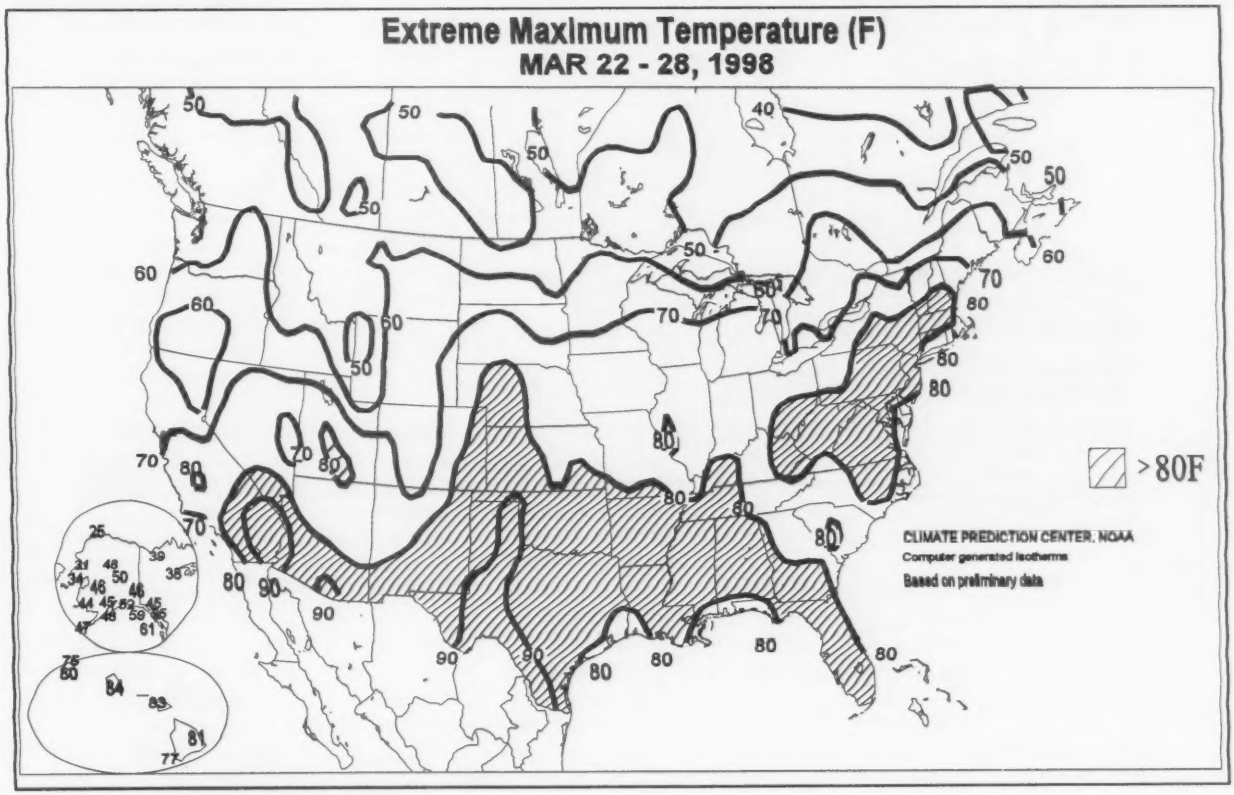

HIGHLIGHTS

March 22 - 28, 1998

Summer-like weather suddenly replaced wintry conditions in the **eastern two-thirds** of the Nation, while cool, unsettled weather displaced a mild and relatively tranquil pattern in the **Far West.** Additionally, most States along the **Gulf of Mexico** and **Atlantic Coast** experienced a rare event this year--dry weather. Unfortunately, after a month's respite, heavy rains (2 to 4 inches) returned to **southern California,** producing another round of mudslides and flash flooding, while snows blanketed the **Sierra Nevada** and higher elevations of **southern California** as readings dropped into the 30's by week's end. In sharp contrast, the mercury climbed to record-high levels in the **southern Rockies** and

(Continued on page 3)

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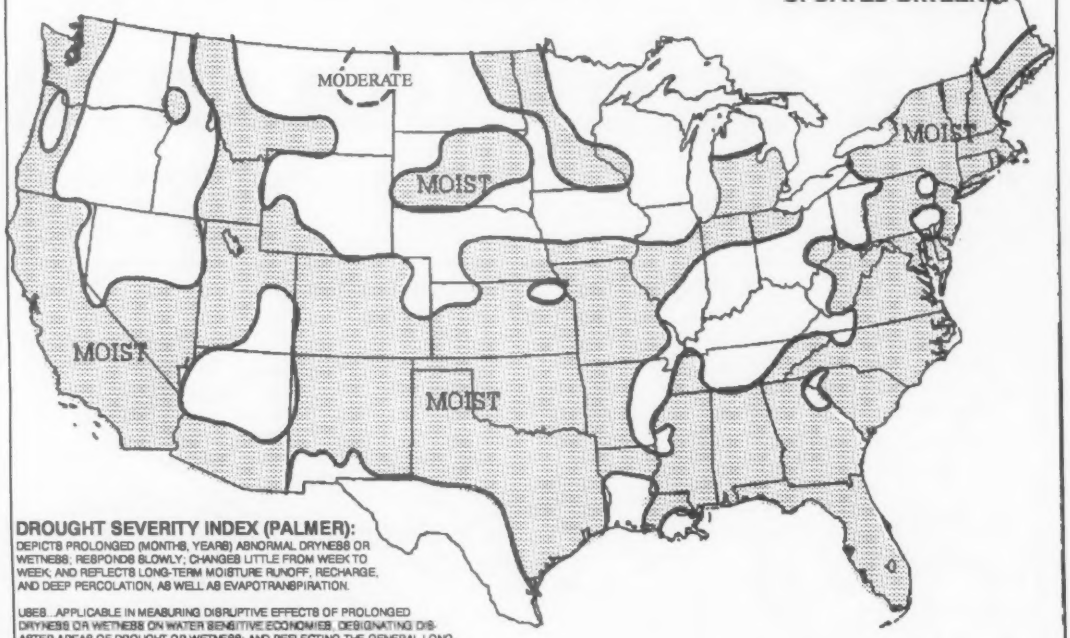
DROUGHT SEVERITY
(LONG TERM, PALMER)
March 28, 1998

UPDATED BIWEEKLY



DROUGHT SEVERITY INDEX (PALMER):
DEPICTS PROLONGED (MONTHS, YEARS) ABNORMAL DRYNESS OR WETNESS; RESPONDS SLOWLY; CHANGES LITTLE FROM WEEK TO WEEK, AND REFLECTS LONG-TERM MOISTURE RUNOFF, RECHARGE, AND DEEP PERCOLATION, AS WELL AS EVAPOTRANSPIRATION.

USES...APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED DRYNESS OR WETNESS ON WATER SENSITIVE ECONOMIES, DESIGNATING DISASTER AREAS OF DROUGHT OR WETNESS; AND REFLECTING THE GENERAL LONG-TERM STATUS OF WATER SUPPLIES IN AQUIFERS, RESERVOIRS, AND STREAMS.

LIMITATIONS...IS NOT GENERALLY INDICATIVE OF SHORT-TERM (FEW WEEKS) STATUS OF DROUGHT OR WETNESS SUCH AS FREQUENTLY AFFECTS CROPS AND FIELD OPERATIONS (THIS IS INDICATED BY THE CROP MOISTURE INDEX).

NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY Based on preliminary reports

DROUGHT SEVERITY INDEX BY DIVISION
(LONG TERM, PALMER)
March 28, 1998

(Index values are in tenths; example: 37 = 3.7)

UPDATED BIWEEKLY

0.4 to -0.4 NEAR NORMAL
-0.5 to -0.9 INCIPIENT DROUGHT
-1.0 to -1.9 MILD DROUGHT
-2.0 to -2.9 MODERATE DROUGHT
-3.0 to -3.9 SEVERE DROUGHT
BELOW -4.0 EXTREME DROUGHT

0.5 to 0.9 INCIPIENT MOIST SPELL
1.0 to 1.9 MOIST SPELL
2.0 to 2.9 UNUSUAL MOIST SPELL
3.0 to 3.9 VERY MOIST SPELL
ABOVE 4.0 EXTREME MOIST SPELL

NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY Based on preliminary reports

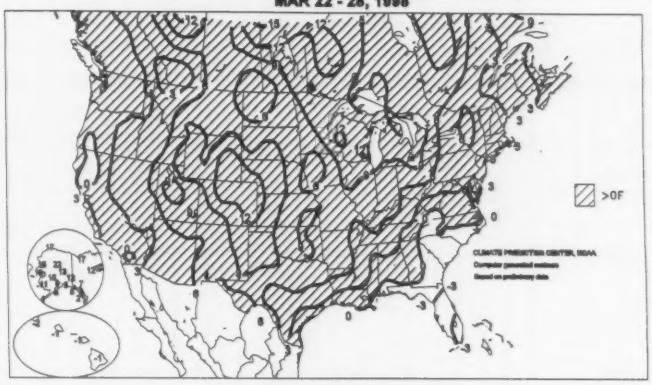
(Continued from front cover)

Plains Monday through Wednesday. Farther east, after a cool start to the week, temperatures rebounded into the 70's across the **Great Lakes** on Thursday and into the 80's by Saturday in **New England**, including all-time March record highs (86°F) at both **Blue Hill Observatory, MA** and **Concord, NH**. All told, over 100 daily record highs were set, and more than 60 record-high minimums were established. The greatest temperature departures (+9 to +16°F), however, were located in the **central Rockies** and **Plains** as alternating conditions kept weekly departures close to normal in the **western** and **eastern thirds** of the country. Across **central** and **northern Alaska**, temperatures averaged 10 to 20°F above normal for the third consecutive week, although more seasonable readings occurred after midweek. In **Hawaii**, cool and showery weather finally brought some measurable March rain to **Honolulu**--but only 0.02 inches. Other locations reported 0.10 to 0.60 inches; however, these weekly totals were still well below normal.

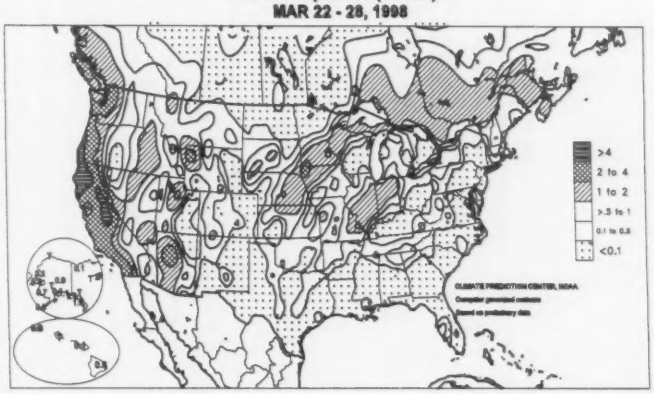
On Sunday, an intense but departing storm system off **Cape Cod** dropped the week's only significant precipitation in the **East** on **New England** as a large dome of high pressure gradually slipped southeastward out of **Canada** into the **Great Lakes** and **mid-Atlantic** regions, keeping the **eastern third** of the United States cool and relatively dry the first half of the week. Meanwhile in the **Far West**, a strong Pacific storm system brought heavy rain and strong winds to **northern California** and **southern Oregon**, including a record 2.04 inches at **Eureka, CA** on March 22. Ahead of the approaching system, warm southwesterly flow began to push the mercury to record-high levels in the **southern** and **central Rockies** and **Plains**. During Monday, at least 25 locations, mostly in **Utah, New Mexico**, and **western Texas**, set record highs, including 90°F at **Midland, TX**, and the warmth persisted into the night as 19 cities observed their highest minimum temperature for the 24th. Tuesday afternoon was a near copy of Monday as another 21stations tied or broke their record high.

As the cold front advanced southeastward into **southern California** by Tuesday, unstable cold air aloft generated severe thunderstorms in central portions of the

Departure of Average Temperature from Normal (°F)
MAR 22 - 28, 1998



Total Precipitation (inches)
MAR 22 - 28, 1998



State that dropped hail and heavy rains, and spawned a few weak tornadoes. By Wednesday afternoon, rain totals of 1 to 3 inches were common across **southern California**, with 6 to 18 inches of snow falling overnight on the **San Bernardino, Riverside**, and **San Diego Mountains**. Unsettled, cool weather spread over the **Southwest** in response to a slow-moving upper-air low pressure center. Farther east, 13 more record highs and 11 additional high lows were set on March 25 as the warmth advanced northeastward, while the cool high pressure center retreated off the **Delaware coast**. Eight more locations, mainly in the **Great Lakes**, reported record warmth on Thursday, and eight others observed record-high minimums.

Record warmth finally spread to the **East** by Friday, with 24 and 16 maximum and high minimum records set, respectively. The next day, the thermometer broke 80°F northward into **central Vermont** and **New Hampshire** as another 13 records fell. Meanwhile, the **Southwestern** storm system slowly tracked northeastward, producing showers and thunderstorms in the **central Plains** and **upper Midwest**. **Grand Island, NE** measured a record 1.57 inches of rain on March 27 while **Ely, NV** set a daily and March record of 1.02 inches. As the leading edge of cooler air slowly tracked into the unseasonably warm and humid air on Saturday, severe thunderstorms developed in the **Midwest**, including a tornadic cell that caused considerable property damage in **Mattoon, IL**. In the cooler air to the north, light to moderate rains dampened the **north-central Great Plains** and **western Great Lakes**. A trailing upper-air disturbance over **Arizona** kept the **Southwest** unsettled and unseasonably cold. The 0.37 inches of rain at **Bakersfield, CA** on Saturday was enough to push their seasonal total to a record 11.75 inches.

National Weather Data for Selected Cities

Weather Data for the Week Ending March 28, 1998

Data Provided by Climate Prediction Center (301-763-8000 EXT. 7511) and the Southern Regional Climate Center

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	72	48	80	28	59	2	0.03	-1.38	0.03	4.89	87	21.47	139	87	45	0	1	1	0
	HUNTSVILLE	70	47	80	32	58	4	0.67	-0.83	0.55	4.27	71	18.85	118	86	47	0	1	2	1
	MOBILE	74	50	79	34	62	-1	0.06	-1.36	0.01	11.03	189	32.23	201	99	51	0	0	5	0
	MONTGOMERY	76	45	82	34	60	1	0.00	-1.37	0.00	2.60	46	16.50	104	87	37	0	0	0	0
AK	ANCHORAGE	41	30	45	27	36	8	0.06	-0.09	0.06	0.06	9	0.69	31	89	60	0	6	1	0
	BARROW	9	0	25	-12	5	17	0.01	-0.02	0.01	0.05	45	0.05	14	88	68	0	7	1	0
	FAIRBANKS	42	16	50	13	29	13	0.00	-0.08	0.00	0.00	0	0.08	7	91	50	0	7	0	0
	JUNEAU	45	30	55	26	38	3	–	–	–	–	–	–	–	96	68	0	5	5	0
	KODIAK	42	33	48	30	37	3	–	–	–	–	–	–	–	80	51	0	3	4	0
	NOME	26	17	34	7	21	10	0.27	0.14	0.12	0.99	215	2.20	118	88	72	0	7	4	0
AZ	FLAGSTAFF	52	28	66	23	40	3	2.21	1.65	1.19	3.72	160	7.16	111	88	49	0	7	4	2
	PHOENIX	79	56	92	49	68	4	0.47	0.29	0.39	0.66	80	3.94	181	68	27	1	0	3	0
	PRESCOTT	64	39	73	31	51	7	1.59	1.21	0.75	2.38	142	5.20	110	74	41	0	1	4	2
	TUCSON	78	50	89	45	64	4	0.30	0.15	0.27	0.55	86	3.91	179	63	23	0	0	2	0
	YUMA	83	58	94	49	70	4	0.22	0.16	0.21	0.29	132	1.55	199	61	30	2	0	2	0
AR	FORT SMITH	76	49	86	32	62	8	0.43	-0.51	0.43	4.26	120	15.07	187	85	47	0	1	1	0
	LITTLE ROCK	73	52	82	34	62	6	0.12	-1.06	0.07	3.95	89	14.16	128	85	48	0	0	2	0
CA	BAKERSFIELD	68	48	84	40	58	0	1.52	1.30	0.81	2.28	240	8.96	312	92	53	0	0	5	1
	EUREKA	57	46	64	35	52	2	4.12	2.99	2.12	6.82	128	22.48	145	92	74	0	0	7	2
	FRESNO	66	51	83	40	59	2	2.78	2.38	0.98	3.26	191	11.46	210	91	48	0	0	4	3
	LOS ANGELES	64	53	68	50	59	0	1.96	1.58	1.39	2.99	163	20.05	297	95	73	0	0	4	1
	REDDING	58	46	63	36	52	-1	2.36	1.45	1.26	4.92	122	34.35	236	95	61	0	0	6	1
	SACRAM/MCCLELL	64	51	70	43	58	–	0.89	–	0.54	1.23	–	20.40	–	97	59	0	0	4	1
	SAN DIEGO	65	55	71	50	60	0	1.58	1.21	0.83	1.89	117	12.22	246	86	61	0	0	4	2
	SAN FRANCISCO	62	52	67	43	57	3	1.09	0.46	0.40	1.75	62	23.63	229	90	63	0	0	7	0
CO	ALAMOSA	60	27	71	20	44	8	0.38	0.27	0.16	0.58	141	0.81	64	84	23	0	7	3	0
	CO SPRINGS	64	37	73	27	50	11	0.30	0.06	0.15	1.92	229	2.29	151	67	24	0	1	2	0
	DENVER	69	39	75	34	54	13	0.00	-0.33	0.00	1.06	94	1.33	61	69	19	0	0	0	0
	GRAND JUNCTION	64	44	76	37	54	8	0.41	0.19	0.26	1.31	158	2.26	120	76	36	0	0	3	0
	PUEBLO	73	34	80	27	53	9	0.84	0.65	0.48	2.63	361	2.89	221	84	21	0	3	2	0
CT	BRIDGEPORT	53	35	71	27	44	3	0.08	-0.80	0.08	3.35	99	11.98	124	84	48	0	4	1	0
	HARTFORD	56	33	84	22	44	4	0.07	-0.78	0.07	4.59	140	11.08	112	82	42	0	4	1	0
DC	WASHINGTON	61	41	81	31	51	1	0.00	-0.71	0.00	5.61	197	18.25	196	77	39	0	3	0	0
DE	WILMINGTON	59	39	82	27	49	3	0.02	-0.78	0.02	4.92	159	12.86	140	82	42	0	4	1	0
FL	DAYTONA BEACH	73	51	79	41	62	-4	0.00	-0.61	0.00	3.86	146	15.44	181	91	48	0	0	0	0
	JACKSONVILLE	74	47	82	40	60	-3	0.01	-0.77	0.01	2.69	80	17.30	183	95	42	0	0	1	0
	KEY WEST	76	66	81	61	71	-4	0.20	-0.18	0.20	3.01	194	10.31	192	81	62	0	0	1	0
	MIAMI	77	64	82	56	70	-3	0.02	-0.53	0.02	3.92	181	11.56	185	75	51	0	0	1	0
	ORLANDO	76	53	84	46	64	-4	0.00	-0.86	0.00	5.00	169	15.72	190	90	45	0	0	0	0
	TAMPA	75	55	83	47	65	-3	0.00	-0.58	0.00	5.18	186	20.64	263	91	53	0	0	0	0
	VALPARAISO/EGLIN	71	49	75	39	60	0	0.00	-1.30	0.00	1.59	32	17.44	130	86	46	0	0	0	0
	WEST PALM BEACH	76	63	82	51	69	-2	0.00	-0.81	0.00	4.03	121	21.43	243	77	52	0	0	0	0
GA	ATHENS	69	45	79	31	57	1	0.09	-1.12	0.05	5.07	102	18.85	133	91	44	0	1	2	0
	ATLANTA	68	47	77	37	57	1	0.12	-1.16	0.10	6.28	120	19.28	130	90	44	0	0	2	0
	AUGUSTA	72	41	80	31	57	-1	0.00	-1.01	0.00	6.10	144	19.97	159	93	40	0	1	0	0
	COLUMBUS	75	48	82	36	62	2	0.00	-1.28	0.00	4.61	88	12.05	82	86	36	0	0	0	0
	MACON	73	45	79	34	59	0	0.00	-1.03	0.00	4.23	97	16.17	118	90	41	0	0	0	0
	SAVANNAH	71	46	81	39	58	-3	0.00	-0.84	0.00	4.06	118	18.44	180	93	50	0	0	0	0
HI	HILO	78	65	81	63	71	-1	0.64	-2.73	0.30	1.57	13	4.01	12	93	66	0	0	7	0
	HONOLULU	80	68	84	64	74	-1	0.02	-0.46	0.02	0.02	1	1.00	13	70	50	0	0	2	0
	KAHULUI	80	65	83	61	73	-1	0.12	-0.47	0.12	0.12	5	0.98	10	81	50	0	0	1	0
	LIHUE	77	66	80	60	71	-2	0.29	-0.67	0.17	0.31	8	4.24	33	81	60	0	0	4	0
ID	BOISE	55	41	63	26	48	4	0.61	0.31	0.31	1.15	96	5.28	144	86	48	0	1	5	0
	LEWISTON	54	42	61	27	48	2	0.29	0.04	0.15	1.45	149	3.56	113	85	63	0	1	4	0
	POCATELLO	53	38	61	29	45	7	0.68	0.38	0.24	0.97	84	4.40	142	89	55	0	2	5	0
IL	CHICAGO/OHARE	60	42	77	26	51	10	0.17	-0.53	0.16	3.80	160	8.18	156	76	43	0	3	2	0
	MOLINE	63	41	79	24	52	10	0.36	-0.42	0.28	3.02	114	8.70	161	86	47	0	2	2	0
	PEORIA	61	42	78	29	52	9	0.31	-0.44	0.24	3.93	152	9.12	165	89	50	0	2	4	0
	ROCKFORD	60	39	77	23	50	11	0.31	-0.34	0.31	1.95	90	5.89	128	83	43	0	3	1	0
	SPRINGFIELD	62	42	78	27	52	7	0.61	-0.20	0.41	3.70	126	8.82	143	89	52	0	3	4	0
IN	EVANSVILLE	66	46	79	29	56	7	0.01	-1.08	0.01	2.36	56	7.33	73	78	44	0	3	1	0
	FORT WAYNE	58	39	78	26	49	7	1.02	0.31	1.02	4.97	192	10.36	163	83	48	0	3	1	1
	INDIANAPOLIS	60	43	78	27	52	7	0.55	-0.36	0.43	4.99	146	8.74	107	89	52	0	3	4	0
	SOUTH BEND	58	39	77	21	49	8	0.71	-0.07	0.71	3.02	110	8.52	124	82	44	0	3	1	1
IA	BURLINGTON	65	43	81	28	54	11	0.26	-0.47	0.11	3.16	125	8.54	174	80	45	0	2	3	0
	CEDAR RAPIDS	59	38	76	22	48	9	0.18	-0.42	0.14	1.77	86	5.08	125	89	54	0	3	2	0
	DES MOINES	57	39	76	25	48	7	0.21	-0.40	0.11	2.08	102	4.65	113	86	59	0	3	3	0
	DUBUQUE	58	39	75	25	48	10	0.05	-0.69	0.04	1.70	66	5.69	111	85	51	0	3	2	0
	SIOUX CITY	56	37	80	26	47	7	1.57	1.07	1.35	2.80	154	4.08	132	96	66	0	3	5	1
	WATERLOO	58	37	75	21	47	8	0.14	-0.46	0.09	1.16	57	3.81	98	94	62	0	3	4	0
KS	CONCORDIA	65	44	78	31	54	9	0.86	0.31	0.84	1.78	90	4.15	126	89	55	0	1	3	1
	DODGE CITY	70	42	86	33	56	10	0.09	-0.31	0.09	2.33	169	3.42	137	91	41	0	0	1	0
	GOODLAND	72	37	84	31	55	13	0.03	-0.25	0.02	0.18	17	0.93	51	80	27	0	2	2	0
	TOPEKA	64	45	78	33	55	7	0.02	-0.61	0.02	2.14	98	3.70	89	84	53	0	0	1	0

Based on 1961-90 normals

Weather Data for the Week Ending March 28, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	68	45	76	34	58	8	0.17	-0.43	0.17	3.77	173	5.11	130	88	50	0	0	1	0
KY	JACKSON	64	46	84	30	55	5	0.25	-0.82	0.21	2.81	66	10.99	92	78	37	0	2	3	0
	LEXINGTON	63	44	78	27	54	5	0.17	-0.85	0.15	2.91	73	9.48	94	80	40	0	2	2	0
	LOUISVILLE	66	49	80	32	58	8	0.25	-0.82	0.25	3.84	91	12.10	117	76	39	0	1	1	0
	PADUCAH	69	49	80	31	59	8	0.00	-1.16	0.00	2.86	65	10.68	92	77	45	0	1	0	0
LA	BATON ROUGE	77	52	83	34	64	1	0.00	-1.08	0.00	3.67	86	24.20	164	96	44	0	0	0	0
	LAKE CHARLES	76	54	80	37	64	1	0.01	-0.71	0.01	3.81	128	18.96	171	97	55	0	0	1	0
	NEW ORLEANS	76	55	80	44	65	1	0.00	-1.04	0.00	5.79	130	29.36	189	91	53	0	0	0	0
	SHREVEPORT	79	55	83	40	67	7	0.08	-0.72	0.08	2.34	72	15.37	139	86	42	0	0	1	0
ME	CARIBOU	40	21	61	8	30	2	0.96	0.37	0.37	3.03	138	9.71	149	93	50	0	5	4	0
	PORTLAND	51	29	75	22	40	4	0.02	-0.84	0.02	2.84	86	13.40	132	86	51	0	4	1	0
MD	BALTIMORE	62	39	84	25	51	4	0.02	-0.74	0.02	7.48	244	19.53	211	86	38	0	3	1	0
MA	BOSTON	56	37	85	29	46	5	0.35	-0.48	0.35	4.02	121	14.32	136	80	42	0	3	1	0
	WORCESTER	51	32	81	22	42	5	0.09	-0.82	0.09	5.89	185	13.64	127	83	42	0	5	1	0
MI	ALPENA	51	28	72	11	39	8	0.96	0.44	0.89	4.66	247	9.20	191	86	50	0	4	3	1
	GRAND RAPIDS	57	39	77	24	48	10	0.31	-0.36	0.31	3.82	165	9.45	169	79	45	0	4	1	0
	HOUGHTON LAKE	50	32	69	15	41	9	0.21	-0.29	0.21	2.28	127	5.28	118	82	51	0	4	1	0
	LANSING	56	37	76	19	47	9	0.41	-0.17	0.41	3.12	152	8.61	176	82	42	0	3	1	0
	MARQUETTE	44	23	55	0	34	6	0.99	0.31	0.87	3.83	153	7.68	120	96	57	0	5	4	1
	MUSKEGON	55	38	70	22	46	10	0.21	-0.42	0.21	2.49	112	6.83	113	80	41	0	3	1	0
MN	DULUTH	45	30	60	16	37	9	0.74	0.26	0.56	0.92	54	5.37	144	96	57	0	3	4	1
	INT'L FALLS	48	27	61	10	37	10	0.09	-0.18	0.09	0.28	30	1.99	81	91	50	0	4	1	0
	MINNEAPOLIS	55	35	72	20	45	10	1.66	1.17	1.53	1.96	114	4.40	124	92	56	0	3	5	1
	ROCHESTER	51	35	69	22	43	9	0.96	0.47	0.59	1.34	86	2.91	95	94	60	0	3	3	1
	ST. CLOUD	52	33	67	17	42	10	0.79	0.41	0.66	1.19	96	2.76	106	96	58	0	4	6	1
MS	JACKSON	77	50	84	31	64	4	0.01	-1.34	0.01	4.22	81	19.26	127	90	38	0	1	1	0
	MERIDIAN	77	46	84	28	62	3	0.01	-1.52	0.01	3.16	52	22.15	133	94	38	0	1	1	0
	TUPELO	72	48	81	29	60	3	0.05	-1.34	0.03	4.60	84	16.78	111	91	46	0	1	3	0
MO	COLUMBIA	66	45	78	30	55	8	0.57	-0.21	0.52	4.03	143	9.75	160	83	51	0	1	3	1
	KANSAS CITY	64	45	78	32	54	8	0.22	-0.41	0.22	2.44	109	4.50	102	81	54	0	1	1	0
	SAINT LOUIS	66	45	81	28	55	7	1.04	0.19	0.73	5.57	173	11.38	159	82	45	0	2	2	1
	SPRINGFIELD	68	46	79	29	57	7	0.51	-0.44	0.51	5.82	167	12.76	172	86	48	0	1	1	1
MT	BILLINGS	55	37	64	30	46	8	0.52	0.22	0.39	1.20	118	2.01	78	98	56	0	1	5	0
	BUTTE	48	31	55	23	39	8	0.25	0.06	0.11	0.87	128	2.17	136	88	52	0	5	4	0
	GLASGOW	50	30	63	25	40	8	0.46	0.35	0.25	0.73	203	1.14	114	87	47	0	5	3	0
	GREAT FALLS	50	34	60	27	42	6	0.16	-0.12	0.11	1.07	109	2.24	91	80	44	0	1	3	0
	KALISPELL	48	31	58	19	40	3	0.69	0.47	0.39	2.29	257	3.61	103	95	55	0	4	6	0
	MILES CITY	56	36	67	32	46	9	0.93	0.76	0.34	1.25	231	1.88	123	96	54	0	1	6	0
	MISSOULA	52	35	59	22	43	5	0.37	0.15	0.28	1.06	120	2.83	97	85	49	0	2	3	0
NE	GRAND ISLAND	59	39	76	29	49	8	1.72	1.24	1.57	1.97	118	2.85	99	95	64	0	3	4	1
	LINCOLN	58	38	76	25	48	5	0.92	0.38	0.87	3.06	165	5.08	163	96	66	0	3	4	1
	NORFOLK	56	38	79	26	47	8	1.36	0.88	1.06	2.13	129	2.65	90	96	67	0	3	4	1
	NORTH PLATTE	63	35	81	26	49	9	0.82	0.50	0.71	1.06	100	1.73	93	96	47	0	2	4	1
	OMAHA	57	38	78	26	47	5	1.00	0.48	1.00	2.99	165	4.59	138	93	66	0	3	3	0
	SCOTTSBLUFF	66	35	80	29	50	12	0.45	0.17	0.45	1.11	116	1.95	102	86	36	0	3	1	0
	VALENTINE	61	38	81	30	50	13	0.27	0.00	0.13	0.63	69	0.82	51	91	51	0	1	5	0
NV	ELY	56	33	70	22	44	8	1.17	0.95	1.02	1.28	151	3.39	151	73	36	0	4	3	1
	LAS VEGAS	72	52	86	40	62	4	1.17	1.09	0.52	1.31	336	4.37	331	70	34	0	6	4	1
	RENO	56	39	64	29	48	3	1.67	1.53	0.98	2.26	342	5.94	216	82	37	0	1	4	2
	WINNEMUCCA	54	38	73	30	46	4	0.83	0.64	0.25	1.04	149	4.31	208	90	52	0	2	7	0
NH	CONCORD	54	27	86	15	40	4	0.52	-0.11	0.51	3.60	146	9.69	129	87	41	0	5	2	1
NJ	NEWARK	60	39	84	30	49	4	0.20	-0.71	0.20	4.18	120	13.87	140	86	46	0	3	1	0
NM	ALBUQUERQUE	71	42	77	39	56	7	0.15	0.02	0.15	2.39	520	3.19	229	63	17	0	0	1	0
NY	ALBANY	54	31	83	14	42	4	0.30	-0.39	0.30	2.38	90	8.76	120	85	49	0	4	1	0
	BINGHAMTON	50	33	78	19	42	6	0.08	-0.58	0.07	3.23	128	10.83	149	77	49	0	4	2	0
	BUFFALO	52	32	77	16	42	5	0.55	-0.08	0.35	3.82	159	11.71	157	81	50	0	4	2	0
	ROCHESTER	55	35	83	18	45	6	0.39	-0.14	0.24	3.01	147	10.97	176	78	43	0	4	3	0
	SYRACUSE	53	34	83	20	44	6	0.25	-0.42	0.12	2.99	121	10.90	156	77	46	0	4	3	0
NC	ASHEVILLE	60	36	72	28	48	-1	0.02	-0.99	0.02	3.65	86	20.00	176	93	44	0	1	1	0
	CHARLOTTE	68	43	80	32	56	2	0.00	-0.94	0.00	3.01	74	12.57	108	84	37	0	1	0	0
	GREENSBORO	63	39	77	27	51	0	0.04	-0.77	0.04	3.66	109	14.93	151	82	41	0	1	1	0
	HATTERAS	55	46	63	39	51	-3	0.00	-0.95	0.00	2.15	69	19.61	148	93	75	0	0	0	0
	RALEIGH	65	42	79	32	54	0	0.00	-0.80	0.00	7.38	213	20.65	194	87	39	0	1	0	0
	WILMINGTON	68	45	78	38	57	0	0.00	-0.83	0.00	2.14	60	20.64	186	86	43	0	0	0	0
ND	BISMARCK	49	30	67	22	39	7	0.30	0.08	0.13	0.44	67	2.19	139	93	58	0	6	3	0
	DICKINSON	47	31	62	26	39	6	0.20	-0.02	0.11	0.39	66	2.78	212	94	64	0	4	4	0
	FARGO	45	32	56	24	38	8	0.02	-0.27	0.01	0.12	13	2.43	117	96	69	0	3	2	0
	GRAND FORKS	46	29	58	21	37	8	0.00	-0.24	0.00	0.49	59	2.43	120	97	70	0	4	0	0
	JAMESTOWN	49	30	63	23	39	8	0.06	-0.18	0.04	0.42	56	2.41	131	96	62	0	4	2	0
	WILLISTON	48	28	57	23	37	4	0.12	-0.07	0.12	0.32	53	2.43	155	93	61	0	6	1	0
OH	AKRON-CANTON	57	37	78	25	47	6	0.22	-0.55	0.12	2.56	86	8.76	119	79	40	0	4	2	0
	CINCINNATI	61	43	78	25	52	6	0.18	-0.81	0.16	3.42	90	9.72	107	80	48	0	3	2	0
	CLEVELAND	59	41	80	25	50	9	0.40	-0.29	0.37	3.31	127	9.14	134	77	40	0	4	3	0
	COLUMBUS	59	42	80	29	51	7	0.03	-0.74	0.03	1.92	65	6.69	91	77	39	0	4	1	0
	DAYTON	58	41	79	26	49	6	0.15	-0.67	0.15	2.50	81	8.12	110	81	47	0	4	1	0
	MANSFIELD	58	40	79	25	49	8	0.21	-0.59	0.19	2.23	76	7.60	111	83	43	0	4	2	0

Based on 1961-90 normals

Weather Data for the Week Ending March 28, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	58	39	78	25	48	9	0.45	0.20	0.44	3.09	130	9.83	168	82	42	0	4	2	0
	YOUNGSTOWN	57	36	78	25	48	8	0.59	-0.15	0.20	3.02	108	9.75	140	82	41	0	4	4	0
OK	OKLAHOMA CITY	75	48	81	36	62	9	0.16	-0.47	0.16	5.33	219	9.54	187	83	39	0	0	1	0
	TULSA	74	50	84	36	62	8	0.28	-0.55	0.28	6.80	214	10.37	157	80	40	0	0	1	0
OR	ASTORIA	51	40	55	31	45	-1	3.92	2.42	1.41	10.00	155	36.71	153	99	73	0	1	7	4
	BURNS	50	34	59	24	42	4	0.56	0.34	0.41	1.23	134	6.45	242	94	52	0	3	5	0
	EUGENE	55	42	60	34	49	0	2.16	0.99	0.90	4.92	97	19.20	103	88	57	0	0	6	1
	MEDFORD	54	43	61	33	48	0	1.43	1.04	0.78	2.39	143	10.44	166	91	62	0	0	7	1
	PENDLETON	57	38	66	27	48	1	0.32	0.08	0.14	0.96	90	4.76	128	93	52	0	2	4	0
	PORTLAND	55	44	62	34	50	1	1.58	0.82	0.65	4.02	124	16.06	129	92	61	0	0	7	1
	SALEM	55	41	60	32	48	2	2.05	1.18	0.89	4.83	126	20.05	141	96	60	0	1	7	2
PA	ALLENTOWN	59	33	83	22	46	3	0.04	-0.72	0.04	3.81	129	11.08	122	87	44	0	4	1	0
	ERIE	56	37	80	21	47	8	0.57	-0.15	0.51	2.02	75	8.65	120	79	46	0	4	2	1
	MIDDLETOWN	60	39	86	25	50	6	0.04	-0.70	0.04	4.36	147	13.90	159	81	36	0	4	1	0
	PHILADELPHIA	59	39	82	30	49	4	0.02	-0.80	0.02	3.93	126	11.43	125	85	45	0	4	1	0
	PITTSBURGH	50	38	80	24	48	6	0.02	-0.78	0.02	1.95	63	8.13	102	78	37	0	4	1	0
	SCRANTON	56	35	79	22	46	5	0.07	-0.53	0.07	2.54	111	8.41	129	80	41	0	4	1	0
	WILLIAMSPORT	58	33	81	21	45	4	0.08	-0.66	0.08	2.86	99	13.39	164	86	40	0	4	1	0
RI	PROVIDENCE	57	34	83	25	45	5	0.04	-0.90	0.04	6.39	175	18.78	169	85	39	0	5	1	0
SC	BEAUFORT	69	48	78	40	59	-2	0.03	-0.86	0.03	2.51	67	18.76	176	91	50	0	0	1	0
	CHARLESTON	70	47	80	39	59	-2	0.00	-0.94	0.00	5.51	139	23.26	218	92	42	0	0	0	0
	COLUMBIA	70	41	81	31	56	-2	0.02	-1.03	0.02	4.27	97	17.43	134	93	39	0	1	1	0
	GREENVILLE	66	42	78	30	54	0	0.22	-0.97	0.20	4.16	86	17.87	133	88	41	0	2	2	0
SD	ABERDEEN	48	31	61	27	40	5	0.10	-0.26	0.10	0.26	22	1.65	82	95	63	0	4	1	0
	HURON	54	35	69	27	44	8	0.21	-0.21	0.08	0.36	24	1.31	52	93	57	0	3	5	0
	RAPID CITY	56	33	75	26	45	8	0.45	0.17	0.43	0.92	102	1.56	87	92	48	0	4	2	0
	SIOUX FALLS	53	35	77	25	44	7	1.84	1.40	1.54	2.67	186	3.83	148	95	60	0	3	5	1
TN	BRISTOL	62	37	80	25	50	0	0.08	-0.77	0.08	3.87	115	11.12	111	87	40	0	3	1	0
	CHATTANOOGA	68	48	81	36	57	4	0.23	-1.11	0.23	6.67	121	19.22	127	90	49	0	0	1	0
	KNOXVILLE	65	44	79	33	54	3	0.18	-0.95	0.17	4.64	100	11.96	93	80	43	0	0	2	0
	MEMPHIS	70	52	81	37	61	5	0.06	-1.21	0.06	4.52	93	16.81	130	82	47	0	0	1	0
	NASHVILLE	68	47	81	34	57	4	0.04	-1.07	0.04	2.30	53	10.06	86	78	41	0	0	1	0
TX	ABILENE	82	52	87	36	67	8	0.24	-0.09	0.24	3.19	266	5.04	149	76	31	0	0	1	0
	AMARILLO	77	42	87	33	59	10	0.03	-0.19	0.02	2.29	263	5.05	256	78	23	0	0	2	0
	AUSTIN	80	57	84	45	68	4	0.24	-0.18	0.24	2.20	131	8.13	146	84	42	0	0	1	0
	BEAUMONT	75	57	78	39	66	2	0.00	-0.74	0.00	4.48	151	18.34	186	94	60	0	0	0	0
	BROWNSVILLE	81	61	84	48	71	0	0.00	-0.14	0.00	0.62	135	2.71	88	91	51	0	0	0	0
	CORPUS CHRISTI	80	60	86	45	70	3	0.00	-0.19	0.00	2.49	293	6.20	137	92	52	0	0	0	0
	DEL RIO	86	58	91	47	72	6	0.00	-0.19	0.00	1.92	337	2.31	111	76	28	2	0	0	0
	EL PASO	79	48	86	39	63	6	0.00	-0.08	0.00	0.17	63	0.36	33	51	20	0	0	0	0
	FORT WORTH	79	56	84	39	68	8	0.12	-0.55	0.12	4.09	166	12.37	190	79	36	0	0	1	0
	GALVESTON	71	60	74	49	66	2	0.00	-0.49	0.00	1.43	72	11.88	158	95	72	0	0	0	0
	HOUSTON	79	55	83	37	67	4	0.00	-0.66	0.00	2.09	79	12.30	136	94	50	0	0	0	0
	LUBBOCK	81	46	90	32	63	9	0.08	-0.11	0.08	1.37	178	3.23	177	72	20	1	1	1	0
	MIDLAND	84	49	90	40	67	8	0.00	-0.14	0.00	0.44	80	1.17	75	64	15	1	0	0	0
	SAN ANGELO	83	51	88	36	67	6	0.09	-0.13	0.09	1.90	237	3.13	117	78	28	0	0	2	0
	SAN ANTONIO	79	57	82	40	68	4	0.05	-0.31	0.05	2.85	211	9.46	194	86	41	0	0	1	0
	VICTORIA	78	58	82	40	68	2	0.01	-0.35	0.01	2.03	147	7.03	126	92	52	0	0	1	0
	WACO	80	55	85	37	68	7	0.12	-0.44	0.12	2.12	101	12.28	211	86	41	0	0	1	0
	WICHITA FALLS	80	50	85	36	65	9	0.16	-0.39	0.16	2.90	148	7.65	172	81	36	0	0	1	0
UT	SALT LAKE CITY	63	43	75	33	53	9	1.53	1.06	0.80	2.75	161	9.27	228	84	42	0	0	5	2
VT	BURLINGTON	48	30	78	11	39	4	0.48	-0.05	0.44	3.48	176	10.46	193	80	54	0	4	4	0
VA	LYNCHBURG	61	36	82	22	48	-1	0.05	-0.73	0.05	3.99	127	17.92	198	84	39	0	5	1	0
	NORFOLK	63	45	80	36	54	3	0.00	-0.81	0.00	4.23	126	18.45	174	92	51	0	0	0	0
	RICHMOND	64	41	83	30	53	2	0.00	-0.80	0.00	6.72	205	19.34	200	96	38	0	2	0	0
	ROANOKE	61	39	84	28	50	0	0.00	-0.79	0.00	5.22	165	21.18	241	73	39	0	4	0	0
	WASH/DULLES	62	38	86	22	50	4	0.00	-0.72	0.00	5.68	199	16.91	202	85	38	0	4	0	0
WA	HANFORD	61	38	69	27	50	–	0.20	–	0.20	0.34	–	2.73	–	75	38	0	2	1	0
	OLYMPIA	54	38	60	27	46	1	2.17	1.13	1.09	5.33	118	22.37	122	99	63	0	2	6	1
	QUILLAYUTE	52	38	58	30	45	1	1.98	-0.47	0.82	6.54	82	37.46	100	99	71	0	2	6	2
	SEATTLE-TACOMA	53	43	58	36	48	2	1.69	0.95	0.82	4.08	126	14.52	115	96	68	0	0	4	1
	SPOKANE	52	36	60	26	44	4	0.57	0.24	0.43	1.24	91	4.89	101	92	54	0	2	3	0
	YAKIMA	56	35	62	24	45	1	0.51	0.37	0.44	0.71	116	4.51	176	88	46	0	2	2	0
WV	BECKLEY	56	37	80	23	47	2	0.07	-0.70	0.04	3.84	125	13.62	153	78	47	0	4	3	0
	CHARLESTON	63	40	85	27	51	2	0.03	-0.80	0.02	3.46	105	11.13	121	84	41	0	4	2	0
	ELKINS	58	31	82	20	45	2	0.21	-0.68	0.14	3.41	99	10.22	107	88	44	0	5	2	0
	HUNTINGTON	63	43	84	25	53	3	0.04	-0.81	0.02	2.03	61	10.64	117	74	38	0	2	2	0
WI	EAU CLAIRE	57	37	72	22	47	13	1.50	1.04	0.72	2.53	171	8.47	202	91	53	0	3	4	2
	GREEN BAY	55	36	71	22	46	12	0.03	-0.48	0.02	1.81	88	4.80	116	84	53	0	3	2	0
	MADISON	57	38	73	21	48	12	0.03	-0.53	0.03	1.94	101	5.53	139	80	48	0	3	1	0
	MILWAUKEE	57	41	75	26	49	12	0.12	-0.57	0.12	2.02	86	7.81	144	82	49	0	3	1	0
WY	CASPER	61	39	69	32	50	14	0.24	-0.01	0.19	0.33	40	1.38	70	78	36	0	1	4	0
	CHEYENNE	63	39	71	36	51	15	0.12	-0.15	0.08	0.56	62	0.93	55	74	26	0	0	3	0
	LANDER	57	33	64	26	45	8	0.34	0.03	0.26	1.21	122	1.91	93	77	42	0	2	4	0
	SHERIDAN	58	33	68	26	45	9	0.41	0.15	0.36	0.85	100	1.34	80	93	50	0	4	3	0

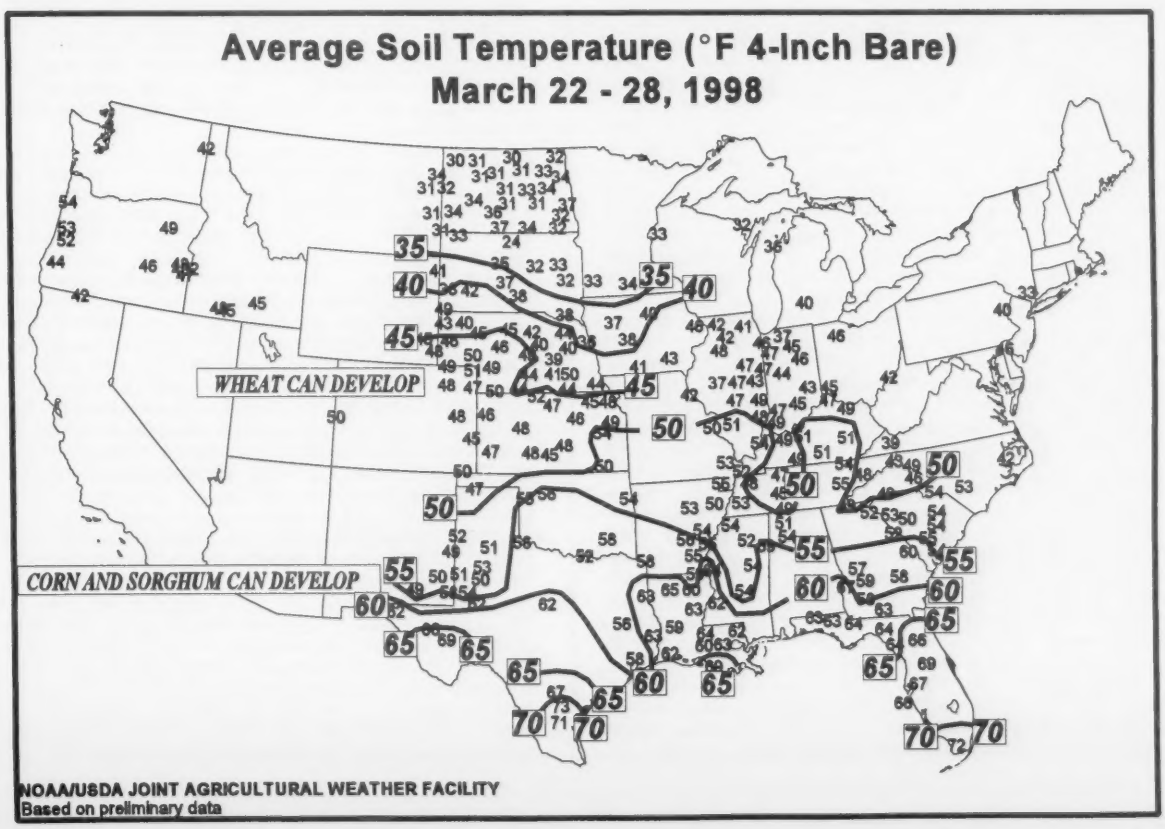
NOTE: These data are preliminary and subject to change. In the past, precipitation totals from a number of stations have been incomplete.

National Agricultural Summary

March 23 - 29, 1998

HIGHLIGHTS

Higher temperatures combined with dry, windy conditions rapidly dried the soggy Southeast, allowing farmers to make excellent progress on spring fieldwork. Tillage and corn planting activities were the top priorities as farmers worked around remaining wet spots. By the end of the week, Mississippi corn growers were caught up to the average planting progress, but Georgia corn growers were still a week behind normal. Cotton planting also got underway. Very warm weather in the central and southern Plains promoted emergence and crop development. In Kansas, Oklahoma, and the Texas plains, the winter wheat crop made good progress with substantial acreage entering the jointing stage. In the Blacklands and south-central Texas, winter wheat continued to head out. Strong winds stressed emerged seedlings in Oklahoma and Texas. Some Texas cotton fields became so dry that farmers were forced to replant. The northern Plains, Corn Belt, and Northeast also experienced unseasonably warm weather, but fieldwork was limited in some areas by heavy rainfall, especially in the western Corn Belt. Small grains were planted where rainfall was lighter. Colorado barley and oat seedings were ahead of normal. In New England, maple producers benefited from strong temperature variations, but sap flow declined in southern New York when record-high temperatures entered the State late in the week. Field activities in California and the Pacific Northwest were hampered by rain and wet soils for much of the week. In the San Joaquin Valley, strong winds caused some lodging of small grains. Between storms, farmers managed to plant a few fields of corn and cotton.


Average Soil Temperature (°F 4-Inch Bare)
March 22 - 28, 1998
WHEAT CAN DEVELOP
CORN AND SORGHUM CAN DEVELOP
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary data

March State Agricultural Summaries

These summaries, issued weekly through the summer growing season, provide brief descriptions of crop and weather conditions important on a national scale. More detailed data are available in Weather and Crop Bulletins published each Monday by NASS State Statistical Offices in cooperation with the National Weather Service. The crop weather reports are also available on the Internet through the NASS Home Page on the World Wide Web at http://www.usda.gov/nass/ or from JAWF at http://www.usda.gov/oce/waob/jawf.

ALABAMA: Warm weather prevailed in all localities of the State. Land preparation for spring planting gained momentum. State peach crop is in a wait-and-see status. A late freeze may have damaged a few early-season varieties. Winter wheat condition was fair to good and will improve with favorable weather. Other activities included general care of livestock, poultry, and catfish.

ARIZONA: Cotton planting has progressed, is still well behind both last year and the 5-year average. At the beginning of March, 2% cotton had been planted. By the end on the month, 11% had been planted. Cotton planting has started in central areas. All of the planted small grains have emerged. Small grains headed started the month at 10%, by the end of March, 27%. Alfalfa hay harvest continued throughout the State. Scattered rains in the middle of the month slowed harvest for about 2 weeks. By the end of the month harvest activity was reported as 17% light, 34% moderate, 44% active. Sheeping off was virtually complete with less than 1% of the alfalfa acreage being sheeped off. Range and pasture conditions were virtually unchanged. At the beginning of the month, range and pasture 9% poor, 30% fair, 56% good, 5% excellent. At the end of the month, range and pasture was reported as 12% poor, 25% fair, 56% good, 7% excellent.

ARKANSAS: Coldest morning of the winter was March 12. Record-low temperatures were set at Jonesboro (15 degrees), North Little Rock (16 degrees). However, county agents report wheat crop in "good" condition. Some fields have suffered lodging, frozen growing points, and loss of yield potential. Loss of primary tillers has been compensated by secondary tillers. Second fertilizations are complete. Precipitation above normal for most reporting stations renews concern for disease development in wheat. Livestock were reported in good condition.

CALIFORNIA: March was significantly drier than the first 2 months of 1998. The third week of the month saw field activities in full swing. But as April approached, spring field activities were again disrupted by rains. Despite the precipitation, conditions were generally conducive to recovery and growth. Small grains and new alfalfa were growing well. Wheat plants in some low-lying, previously flooded fields were still suffering from stunted growth. A few fields in the Sacramento Valley remained soggy as April neared. Wheat head development was well underway in southern counties. Aerial applications of fertilizers, herbicides were ongoing in wheat and alfalfa fields. Planting of new alfalfa continued in the southern San Joaquin Valley. Alfalfa for hay and seed was mowed, treated for weevils. Cotton, dry bean fields were cultivated, fertilized, prepared for planting. As March was winding down, a few cotton fields began to be planted in the southern San Joaquin Valley. Most growers were awaiting warmer soil temperatures. Sugarbeets were cultivated, thinned, weeded. Corn planting resumed in the southern counties. Rice growers began draining fields in preparation for planting. Some rice stubble was burned where conditions permitted. Alfalfa, small grains and winter forage were cut for hay or greenchopped in southern counties. Sunny weather allowed growers to work in orchards and vineyards. Early varieties of almonds, stone fruit were blooming. By the end of the month, these early varieties were leafing out, as the later varieties began to bloom. Trees were sprayed to control blossom rot, thrips, weeds. With the surplus moisture this year, some growers expressed concerns about fungus and brown rot. Grapevines were developing new leaves and budding. Navel oranges were being picked in the Central Valley. Valencia orange harvest was active in the Coachella Valley. Lemon harvest continued in the south coast area. March's warmer, drier weather aided the progression of spring vegetables. By mid-month a few fields were dry enough for transplants. Asparagus harvest continued in Monterey and Kern Counties, as it declined in Imperial and Riverside Counties. Broccoli, cauliflower were harvested in the coastal, desert valleys. Harvest of lettuce progressed in the desert valleys. Spring lettuce was weeded, thinned, sprayed to control mildew. Spinach, lettuce were planted in the coastal areas. Planting of spring melons proceeded in the Imperial, Coachella Valleys. Many plantings were somewhat later than usual because of moist soil conditions. The garlic crop was progressing well. Harvesting of artichokes continued along the coast. Cabbage was harvested in the Imperial, San Joaquin Valleys. Fresh market tomatoes were being planted in Fresno County. Sweet corn, processing tomato planting continued. Cantaloupe planting began. Strawberries were starting to set fruit. Winter potato harvest continued in Kern, Riverside Counties. Other crops harvested were mushrooms, onions and radishes. Pasture, rangeland remained in good to excellent condition, as it continued to improve with sunshine, higher temperatures. In the north, where snow was melting at higher elevations, range and pasture grasses were growing well. In the warmer areas of the State and at lower elevations, forage continued to gain strength, quality as plants matured. There were ample supplies of feed and water for range animals in most areas. Range animals on drier foothill pastures were gaining weight on lush vegetation. Cattle, calves were in good shape, doing well. As the pollination period ended in almond orchards, beekeepers moved hives into cherry, apple orchards.

COLORADO: March was generally mild with only brief periods of cold temperatures. The mountains received additional snowfall. Portions of the eastern Plains received snow and/or rain at the middle of the month, and again at the end of the month. The heaviest snow at mid-month was along the Front Range. The southwestern mountains received the heaviest snow at the end of the month, with less amounts along the Front Range and the east. Planting of spring grains, onions, and sugar beets progressed favorably between storms. Calving and lambing is progressing quite well.

DELAWARE: Excessive rainfall drowned some small grains, delayed pea, potato planting. For southern Delaware, the fruit crop was doing well and may be a couple of weeks ahead of schedule. In the northern part of the State, a freeze may have caused some thinning in peaches. The general condition of livestock and poultry was fair to good. Wet feed lots presented some problems with livestock. Supply of hay, feed rated good. Activities: Spreading chicken manure, top-dressing small grains, broadcasting fertilizer for row crops, planting of peas and potatoes, removing plastic from strawberries.

FLORIDA: Cool, wet growing conditions persisted most of the month of March, with significant rains, strong winds and tornados during mid-month. Very cold weather followed the storms, with freezes occurring across the northern half of the State. The freezing temperatures damaged the early transplanted tobacco fields and the north Florida blueberries. Topsoil moisture was adequate to surplus throughout the State. The wet weather delayed the closing of the sugarcane mills for the season. Nearly all planting, harvesting, and fieldwork were delayed by the wet conditions. Strawberry harvest continued during the month, with picking delayed by wet fields. Vegetable fieldwork and harvest have been generally hampered by the windy, wet weather conditions. Citrus trees are in mostly good condition. Bloom for the 1998-99 crop year was variable as some low temperatures slowed development. By month's end, the harvest of the early and midseason oranges was virtually complete and movement of Valencia was very active. Both Honey tangerine and Temple harvest was slowing, and harvest of white and colored grapefruit continued strong.

GEORGIA: Soil moisture 1% short, 71% adequate, 28% surplus. Corn 3% poor, 41% fair, 54% good, 2% excellent; 39% planted, 59% 1997, 45% avg.; 14% emerged. Cotton 0% planted, 1% 1997, 0% avg. Tobacco 4% poor, 42% fair, 52% good, 2% excellent; 15% transplanted, 39% 1997, 21% avg. Wheat 1% very poor, 11% poor, 39% fair, 45% good, 4% excellent; 81% jointing, 93% 1997, 82% avg.; 25% boot, 53% 1997, 31% avg.; 7% headed, 13% 1997, 5% avg. Onions 8% poor, 31% fair, 50% good, 11% excellent. Watermelons 4% poor, 27% fair, 68% good, 1% excellent; 26% planted, 45% 1997, 31% avg. Apples 6% very poor, 16% poor, 49% fair, 27% good, 2% excellent; 36% blooming, 13% 1997, 6% avg. Peaches 23% very poor, 22% poor, 32% fair, 18% good, 5% excellent; 99% blooming, 98% 1997, 93% avg.

Pasture feed 3% very poor, 9% poor, 36% fair, 47% good, 5% excellent. Warmer weather and drier conditions encouraging an abundance of agricultural activity throughout the State. Farmers actively preparing fields for planting. Excellent corn planting progress, still a week behind last year, several days behind average. Cotton planting underway. Tobacco transplanting made good progress but still a week behind last year. Excellent week preparing land, still some wet spots, watermelon fields most affected. Pastures greening up and farmers busy applying fertilizer and herbicides. Other activities included fertilizing pecan trees, and small grains, harrowing cotton stalks and waiting on soil test samples.

HAWAII: Days suitable for fieldwork 31.0. Weather conditions fair for agriculture. Several high pressure systems north of State dominated weather for month. Mostly sunny and dry. Intermittent gusty winds associated with high pressure system brought windward showers on all islands. Warm days, cool nights. Irrigated crops made favorable growth. Non-irrigated crops are in need of rain. Soil moisture low. Banana orchards in need of more rain. Harvesting will remain steady. Crop condition varied fair to good. Papaya harvesting seasonally light. Head cabbage in good condition. Harvesting of dry onions steady.

IDAHO: Topsoil 53% adequate and 47% surplus. Calving is 75% complete, lambing 69%. Problems this past week with heavy rains have caused muddy conditions and spotted cases of calf scours. Hay and roughage supply 33% surplus, 53% adequate, 13% short, 1% very short. Irrigation supply 66% excellent, 34% good. Dry peas planted 4%. Lentils planted 1%. Oats planted 4%. Onions planted 41%; emerged 3%. Barley planted 10%; emerged 1%. Spring wheat emerged 2%. Sugarbeets planted 13%; emerged 3%. Activities: Planting small grains, dry peas, lentils, onions, and sugarbeets, shipping seed potatoes, calving, lambing, feeding livestock, branding calves, fertilizing, disking, repairing machinery, and working on taxes.

ILLINOIS: With the recent warm, windy weather, farmers were preparing for the upcoming planting season. When fields were not too muddy, anhydrous ammonia was applied to winter wheat fields and manure was spread on others. As of March 27, topsoil moisture was rated 29 percent surplus, 66 percent adequate and 5 percent short. Farmers began their spring seeding of oats, which was 3 percent complete by March 29. This compares with 16 percent last year and the 5--year average of 13 percent. The condition of winter wheat declined as an unusual cold spell hit the first 2 weeks of the month. The snow cover insulated stands with the near zero temperatures, while in areas with little to no snow cover, the tops of leaves were burned with stands still looking good. As of March 27, winter wheat was rated at 9 percent excellent, 60 percent good, 26 percent fair, 4 percent poor and 1 percent very poor. The warmer weather helped stretch hay supplies as pastures were greening up. The above-average precipitation left many fields muddy and made livestock yards difficult to get around for feeding and managing of livestock. Conditions for calving improved over the past week with a difficult beginning in early March.

INDIANA: March turned into the only month of winter for Hoosier farmers following a heavy snow and strong winds on March 9th. Many rural areas were without electricity for a few days and several roads were closed. Warmer weather and sunshine have arrived this past week. Recent showers, some heavy, have caused ponding and river bottom flooding in fields. Precipitation was below average for most of March. Winter wheat is growing rapidly and looks very good in most areas of the State. Very little fieldwork has been accomplished thus far this year. Livestock are in mostly good condition, but some respiratory problems are being reported. Nitrogen, fertilizer and lime have been applied on some fields. Tillage of soils has been completed in isolated areas. Farmers have been busy preparing equipment and purchasing supplies. Major activities: Applying nitrogen to wheat, marketing grain and livestock, attending meetings, hauling manure, repairing machinery, fixing tile, calving and lambing.

IOWA: Summary for March 1998. Fertilizer application (including fall) completed 45%; 34% 1997 and 34% 5-year avg. Average depth of snow cover 1 inch; average depth of frost penetration 2 inches. March weather brought a blizzard, with one foot of snow plus drifting to much of the State. Late in the month, temperatures were unseasonably warm. Fields and feedlots very muddy, reducing cattle herd health and possibly delaying fieldwork. Soil erosion 71% light to none, 27% moderate, 2% severe. Flooding potential 54% none, 34% limited, 10% moderate, 2% extensive. Grain movement was rated 8% none, 47% light, 41% moderate, 4% heavy. Availability of hay and roughage short 17%, adequate 74%, surplus 9%. Quality of hay and roughage was rated poor 13%, fair 51%, good 36%. Heavy snows, deep mud, and scours were very hard on newborn calves. Cattle and calf losses increased significantly from February and were rated 12% below average, 68% average, 20% above average. Hog and pig losses 15% below average, 81% average, 4% above average.

KANSAS: Topsoil moisture 3% short, 61% adequate, and 36% surplus. Subsoil moisture 2% short, 74% adequate, and 24% surplus. Wheat condition 2% poor, 19% fair, 58% good, and 21% excellent. Wheat jointing 9%, 22% 1997, 13% avg. Acreage lost to winterkill 1%, NA 1997, NA avg. Wheat wind damage 5% moderate, 11% light, 84% none. Wheat freeze damage 2% moderate, 17% light, 81% none. Two major snowstorms moved through the State during March. The first storm occurred early in the month causing blizzard conditions with the heaviest snowfalls in the north. The second storm dropped snow mixed with freezing rain, causing icy conditions in the southwest and central parts of the State. The storms, snowcover and cold weather are making evaluation of the winter wheat crop difficult. The damage, however, appears to be minimal. Insect infestations were light, with a few reports of army cutworms and winter grain mites. Disease infestations were also light, with some reports of leaf rust and wheat streak mosaic. Oats seeded 52%, 96% 1997, 76% avg. Field activities were limited due to snow and wet fields. Pasture conditions were rated 2% very poor, 7% poor, 23% fair, 59% good and 9% excellent. Major livestock activities included calving, lambing, and moving cattle. The recent precipitation is causing very muddy conditions and scours. Some newborn calves were lost due to the storms and low temperatures.

KENTUCKY: March began with seasonal temperatures and scattered light rain that keep soil moisture adequate to surplus and stimulated early growth of pastures and winter wheat. A blast of Arctic air lowered temperature into the 20's at mid-month, causing concern about potential damage to the advanced winter wheat fields. Saturated soils in most areas limited fertilizing and field preparation for spring planting. Burley tobacco producers continued to strip the late-curing crop as most markets had final sales. A few markets will hold clean up sales the week of April 6. Kentucky gross sales through March totaled 494.1 million pounds and averaged $189.13 per hundred pounds. Wet conditions made pastures muddy, but early growth provided some nutrient value late in the month. Cattle remained in fair to generally good condition as supplemental feeding continued.

LOUISIANA: Days suitable for fieldwork for the month was 14.1 days. Soil moisture throughout the State was in surplus for each week due to above-normal precipitation for the month. Temperatures were about normal. Most fieldwork was hindered by wet conditions, until rains ceased the last week of the month, which caused fieldwork to increase significantly. Corn: Planting was behind schedule until the last week of the month when conditions dried and a considerable amount of acreage was planted. Sugarcane: Wet fields kept growers out of the fields until late in the month when drier conditions allowed fieldwork to continue. Off-barring and herbicide applications were done as well as destroying old stubble cane. Wheat: Crop development was slow until late in the month when warm sunny weather enabled a large amount of acres to start heading. Rice: Water leveling was active as well as planting in the southern parishes. Land preparation for planting was active in the northern parishes. Vegetables: Commercial strawberry harvest was active and spring vegetable planting of bell peppers began late in the month. Livestock: Cattle were being fed hay and some grazed ryegrass pastures. Spring calving was in full swing. Pasture fertilization was active. Crawfish: Crawfish catches became heavier as the month progressed.

MARYLAND: Large amounts of precipitation caused standing water in some fields of small grains. Wet soils also slowed nitrogen applications and field preparations for corn planting. Freezing temperatures during the second week of March in western Maryland caused light damage to fruit and minor damage to small grains. For the State, the general condition of livestock and poultry rated good. The hay and feed supply for the lower Eastern Shore rated good. However, for the upper Eastern Shore and the Western Shore, hay supplies rated very poor to fair. For general crop condition, the lower Eastern Shore rated fair to mostly good and for the upper Eastern Shore, crop conditions rated poor. For the Western Sshore, crop conditions rated mostly good. Activities: fertilizing small grains and plowing fields (when condition allows).

MICHIGAN: Wheat has come through the winter in good condition. Frozen ground in early March allowed farmers to top dress wheat fields. Mild temperatures in late March accelerated wheat growth and fruit development. With the mild weather, farmers are looking to an early sugarbeet planting. Feed is in good supply. Major activities for the month were repairing equipment, planning for spring, hauling manure, spreading fertilizer, and caring for livestock.

MINNESOTA: Average temperatures returned for most of March, with the exception being a cold period during the middle of the month. There were some concerns of possible damage to forage that had broken dormancy during an unseasonably warm February. Slightly below-average precipitation occurred across most of the State for the first 3 weeks of the month. Much of the State received more precipitation toward the end of the month, with some locally severe storms in southern parts of the State. Livestock remained in good condition, with the calving season underway.

MISSISSIPPI: The main farming activities for the month of March were preparing land, planting corn and feeding and tending livestock. Wet conditions delayed most fieldwork until the latter part of the month. Freezing temperatures in some areas may have caused damage to some of the state's wheat crop. Hay supply was adequate across the state. Cattle were in mostly fair to good condition. Wheat was in mostly fair to good condition. Soil moisture was mostly adequate to surplus

MISSOURI: Wet weather characterized the majority of the month of March. Most areas are still too wet to begin fieldwork. Precipitation for the past week averaged 0.58 inch. Spring-like temperatures moved across much of the state this past week, with the overall average temperatures from 5 to 8 degrees above normal. Green wheat fields are seen throughout Missouri. A mild winter was beneficial for the wheat crop and it is mostly in good condition.

MONTANA: At month's end, field work in progress was rated 82% none, 17% just started, and 1% well underway. Recent snows and rains have left some fields too wet to work in. By the end of the month soil moisture was rated as follows, topsoil moisture 1% very short, 22% short, 64% adequate, 13% surplus. Subsoil moisture 12% very short, 35% short, 50% adequate, 3% surplus. Winter wheat emergence 28% still dormant, 45% greening, 27% green and growing. Winter wheat condition 0% very poor, 6% poor, 32% fair, 57% good, 5% excellent. Winter wheat wind damage 1% heavy, 10% moderate, 58% light and 31% none. Freeze and drought damage to winter wheat 2% heavy, 15% moderate, 59% light, and 24% none. Livestock reported in good to excellent condition. The mild winter has left feed supplies in good shape. Reports indicated no major livestock losses due to the winter weather. Calving is 58% complete and lambing is 41% complete. Supplemental feeding continues with 94% of cattle and calves and 99% of sheep and lambs receiving supplemental feeding.

NEBRASKA: Days suitable for fieldwork 2.3. Topsoil 1% very short, 8% short, 74% adequate, 17% surplus. Subsoil 1% very short, 12% short, 80% adequate, 7% surplus. Winter wheat condition 1% very poor, 5% poor, 20% fair, 56% good, 18% excellent. Fieldwork was limited in early March due to snow and again late in the month due to precipitation across most of the State. Oats 6% seeded, 16% 1997, 10% avg. Calving 66% complete. Activities: limited oats seeding, spring tillage, stalk shredding, spring equipment preparation, grain marketing, tax and ag census paper work, and livestock care.

NEVADA: Unusually warm temperatures were experienced statewide during March. Precipitation was limited, but mountain snow pack was reported as highest on record. Potential for spring flooding, particularly in the Carson and Walker River watersheds, remains. Repairs to ditches and levees continued, as irrigation season was commencing in central districts. Surface irrigation water deliveries to the Smith and Mason valleys began in early March. Sod harvest was underway in the extreme south. Fields were being prepared for planting central and spring grain planting was underway. Weed burning underway. Calving, lambing well along. Castrating, branding of calves underway. Main farm, ranch activities: Ditch repair, working livestock, grain planting, field leveling, irrigation.

NEW ENGLAND: Unseasonably warm temperatures during last week of month. Topsoil and subsoil moist from winter rain and snow. Maple production in full swing. Farmers marketing apples and potatoes from storage. Farmers placing orders for ducklings and chicks. Major farm activities: clearing debris, fixing fences; caring for livestock.

NEW JERSEY: Temperatures averaged above normal for the first and last weeks of the month with the middle of the month averaging below normal. Precipitation averaged above normal. The greatest 24-hour rainfall reported was 3.19 inches at Freehold on the 8th to 9th. Farmers are active maintaining equipment, caring for livestock and preparing and organizing records for tax and census purposes. Nursery workers are digging and shipping plant material while greenhouse workers prepare vegetable plants for transplant. In Gloucester county, peach trees are in full bloom. Planting of peas, cabbage and romaine lettuce reported in areas of southern areas.

NEW MEXICO: March weather was very erratic with winter storms moving across the state almost weekly. Average weekly temperatures ran from 4 degrees below normal to 7 degrees above normal. Each storm system brought rain, snow or both with accumulated precipitation for most reporting stations higher than normal for March. Farmers were busy with early spring planting and land preparation. Planting is complete for lettuce and onions, along with about half of the chile. Fruit trees suffered light to moderate freeze damage from the last storm to move through the state. Ranchers continued some supplemental feeding for livestock but pastures are beginning to green up.

NEW YORK: Mild weather permitted early fieldwork to progress rapidly. Orange County onion growers prepared fields and some early planting was underway. Maple producers reported an earlier than usual sap flow with sugar content higher than average. Warm weather at month's end put a stop to production in southern areas, but further north sap continued to flow in areas where producers were able to tap. Severe damage to trees from the winter ice storm in six north country counties prevented some producers from tapping

NORTH CAROLINA: Statewide, 4.2 days were suitable for fieldwork for the week of March 22-28. Though most of the month was filled with cold rainy weather, the last week in March helped farmers recover from the lack of dry days in the early planting season. Soil moisture for the week is rated 58% adequate and 42% surplus. Activities for the week included: planting Irish potatoes and corn; transplanting cabbage; preparing and tending tobacco beds; tending livestock; and repairing equipment.

NORTH DAKOTA: Seasonably warm temperatures in late March melted most of the heavy snow cover the western part of the State had at the beginning of the month. Livestock were reported in generally good condition while calving and lambing are in full swing. Farm yards and roads are soft and muddy, making it difficult to move grain, livestock and equipment. The wet, muddy conditions have also caused some scour problems in newborn calves. State average snow depth is 0.9 inches, down from 3.6 inches last year. Cattle condition: 2% poor, 18% fair, 73% good, 7% excellent; calves: 1% poor, 21% fair, 71% good and 7% excellent; sheep: 1% poor, 13% fair, 78% good, 8% excellent; lamb: 2% poor, 14% fair, 77% good and 7% excellent. Supplemental feeds were fed to 99% of the sheep and 98% of the cattle. Hay, forage supplies were 4% short, 89% adequate, 7% surplus. Grain and concentrates were rated 2% short, 95% adequate, and 3% surplus. Pastures were still 100% dormant but 72% were open for grazing.

OHIO: Temperatures were above average, but precipitation was below normal. Winter wheat greening up. In the Northern part: a few reporters mentioned the winter wheat in low spots was yellow due to water damage. Some growers were top dressing winter wheat. Alfalfa was reported in good condition, greening up. Tobacco growers are seeding float trays. Activities: Grain hauling; spreading manure; some field tillage; fencing; equipment repair, maintenance.

OKLAHOMA: Nearly double the average monthly rainfall delayed most seedbed preparation and planting. Excessive moisture caused minor crop damage and soil erosion in low-lying areas near the Cimarron River. Bitter cold weather during early March was responsible for many deaths of newborn calves in northwest Oklahoma. Peach trees in eastern Oklahoma survived freeze damage and a good crop is expected. Ample moisture and warm late-month temperatures improved wheat to one of its best condition ratings of the season. Strong March winds with gusts of more than 50 mph were recorded in many northern and western localities.

OREGON: Activities: spring fieldwork underway statewide as weather permitted. Fertilizing & spraying underway. Field crops state wide look good due to mild winter. Tree fruit blooming. Growers putting on scab sprays. Growers preparing for frost protection. Cranberry growers planning fertilizer program & fine tunning frost control on the South Coast. Rhubarb and root crops being harvested in the Willamet Valley. Onions being planted on east side. Greenhouses and nurseries digging, balling and shipping. Pastures greening up statewide. Some areas discontinued supplemental feed. Spring calving and lambing underway

PENNSYLVANIA: Recent cold weather and frosts caused some damage to orchards and flower crops that bloomed early after a mild winter. The majority of the damage was to apricots and plums. Damage to peaches and apples was being assessed. Concern for the effects of the unseasonably warm weather in January and February would have on pests and weeds in the coming summer continued. Major activities: hauling manure; fixing fences; caring for livestock; buying seed and other supplies; preparing machinery; and attending farm organization meetings

SOUTH CAROLINA: The first of the month brought rain and high winds. Record breaking low temperatures occurred mid-month. The extent of damage to peaches and other fruit crops is uncertain until later in the season. Currently it appears that only early season varieties were hurt severely. Field crop planting is underway as fields continue to dry out. Wet fields have caused problems in small grains, specifically wheat, as growers have been unable to apply nitrogen. Wheat diseases are present and control attempts are active. The month ended with several warm, sunny days, a major plus to help with the very wet fields still in the State.

SOUTH DAKOTA: The month of March started off with winter storms and colder temperatures. As the month progressed, temperatures became milder. In spite of early-month snow storms, snow cover was minimal for the month of March. Due to lack of quality snow cover, exposed winter wheat, rye and alfalfa crops could be hurt if colder temperatures return. The general opinion is: Winter crops are not damaged yet since temperatures were unusually mild. Winter wheat and rye crops are in fair to excellent condition. Most producers are taking advantage of mild conditions to prepare machinery and supplies for spring seeding. Producers are eager to prepare for planting as soon as the soils dry. At the end of March, 82% of the alfalfa crop was under no snow cover, 17% adequate snow cover, and 1% excellent snow cover. Seventy-seven percent of the winter wheat crop was under no snow cover and 23% under adequate cover. Fifty-nine percent of the winter rye crop was under no snow cover, 33% adequate, and 8% under excellent snow cover. Statewide, the average snow depth was 1 inch. Livestock are in good to excellent condition, despite the early March snow storms and cold temperatures. Calving was 34% complete, with lambing 50% complete. Calf deaths for March rated 21% below average, 77% normal and 2% above normal. Lamb deaths were rated 25% below average, 74% normal and 1% above normal. With the mild weather conditions, producers have been able to capitalize on open grazing conditions, allowing them to use less of their feed stocks. Grain and concentrates supplies were rated 2% short, 80% adequate, and 18% surplus, while hay and roughage supplies were rated 2% short, 77% adequate and 21% surplus. Stock water supplies were 2% short, 82% adequate, and 16% surplus.

TENNESSEE: March weather was characterized by normal precipitation and temperatures ranging from teens to the seventies. Temperatures dropped to record lows during the second week of the month. Wheat crop development has slowed due to the mid-month freeze and the condition has declined to mostly good-to-fair. Tobacco seeding is on schedule with normal growth. The apple and strawberry crops suffered light to moderate freeze damage. The peach crop freeze damage was reported as severe.

TEXAS: Producers endured wide swings in weather conditions during March. The month began under mostly open conditions, allowing planting operations to get underway. Mid month saw conditions turn wet, and field activity was limited. A very strong cold front moved through the state at mid month dropping temperatures into the freezing range well into Central Texas. Livestock suffered from these rapid changes with some calves and lamb losses reported. The month ended under open, warmer temperatures allowing fieldwork to rapidly increase. By the end of the month, planting operations had nearly caught up with average. Pastures were breaking dormancy and greening up rapidly by the end of the month. High winds caused some problems at the end of the month, most by drying out top soil and causing feeding problems.

UTAH: Major farm, ranch activities during the month of March included planting spring grains, feeding livestock, spreading fertilizer, and calving. The recent wet weather has delayed spring plantings in a few areas of the state. Cattle and sheep remain in good condition.

VIRGINIA: Wet and muddy fields have began drying down as unseasonably warm temperatures were reached by months end. Most fields remain saturated however, due to previous rains. Soil preparation and other field activities are two weeks behind schedule due to wet conditions. Grain corn producers in drier localities were able to get a few acres planted. Some producers were able to get their summer potatoes planted as conditions permitted. Pastures have started to green up in some localities and are in mostly fair to good condition. Fruit trees were potentially damaged due to sub-freezing temperatures during the second week of March. These extreme low temperatures were preceded by spring-like conditions in February which caused premature budding in some peach trees. Cloudy and cold weather reduced tobacco greenhouse seedling populations as well as quality. Late cold temperatures have limited alfalfa and small grain growth. Livestock were in mostly good condition for the month of March. Some localities reported livestock in poor and thin condition due to short hay supplies. A mild winter for some localities allowed for adequate hay supplies. Calving and lambing were in full swing last month with a few more losses than normal due to wet conditions. Muddy pastures continued to make feeding difficult for some livestock producers. Farming activities included orchard pruning, tending to livestock, transplanting cabbage, broccoli, and other vegetables, tax preparation, and attending producer meetings.

WASHINGTON: Topsoil 10% short, 70% adequate, 20% surplus; subsoil 15% short, 80% adequate, 5% surplus. Hay, and other roughage supplies, 95% adequate, 5% surplus. Mild winter weather conditions continued for Washington. West of the Cascade Mountain range, dry weather mid-month allowed fieldwork to begin. Fertilizer was applied to green chop fields, turf grass growers mowed, Christmas tree producers applied herbicide, vegetable fields were prepared for planting. Pastures were green and growing. Eastern Washington reported good moisture conditions, with most areas normal to slightly above for the year to date. Fieldwork began between showers. Winter wheat grew vigorously, spring wheat, barley, potatoes, were being seeded. Some producers are reseeding to spring wheat or barley. Fertilizers and herbicides were applied. Some aphid infestations were being monitored. Orchards came out of dormancy 7 - 10 days early. No severe freeze damage was reported. Grazing conditions were good. Hay supplies remained good in most areas. Spring calving was in full swing.

WEST VIRGINIA: Activities for the month of March: Some fields along the river are being worked in preparation for planting. Seeding is underway in pastures and meadows. Muddy conditions continue to be a problem in some areas as farmers try to spread manure and feed livestock.

WISCONSIN: As of late March, frost depths averaged 0.6 inch, compared to the 36-year average of 10.4 inches. One year ago the frost depth was 5.5 inches. The snow depth averaged 0.3 inch, compared to the average of 3.9 inches. One year ago, the snow depth was 6.9 inches. Soil moisture conditions were wet, statewide. Warm weather created muddy conditions for livestock. Some farmers were disking and planting oats.

WYOMING: Below normal precipitation most of March but occasional storms and good carry-over storage kept reservoir levels above normal. Topsoil moisture supplies at month's end 13% short, 72% adequate, 15% surplus. Subsoil moisture supplies, 21% short, 77% adequate, 2% surplus. Winter wheat condition 10% fair, 79% good, 11% excellent. Barley planted 20%, last year 41%, 5-yr ave. 22%; oats 5%, 4%, 4%; spring wheat 5%, 10%, 6%. Calves born 55%, last year 50%, 5-yr ave. 54%; farm flock lambs born 70%, 60%, 66%; range flock lambs born 5%, 3%, 6%; farm flock shorn 74%, 64%, 68%; range flock shorn 21%, 19%, 23%. Calf and lamb losses mostly normal. Pasture and range condition 15% fair, 72% good, 13% excellent. Warmer, drier weather needed for fieldwork.

International Weather and Crop Summary

March 22 - 28, 1998

HIGHLIGHTS

FSU-WESTERN: Continued unseasonably cold, damp weather kept winter grains dormant and slowed early-season fieldwork for spring grain planting.

EUROPE: Generally dry weather allowed fieldwork for spring grain planting in the west and north but continued to limit moisture for crop development in Spain. Unseasonably cold weather in the east slowed further growth of winter grains and spring grain planting.

EASTERN ASIA: Cool weather continued to slow winter wheat development in the North China Plain.

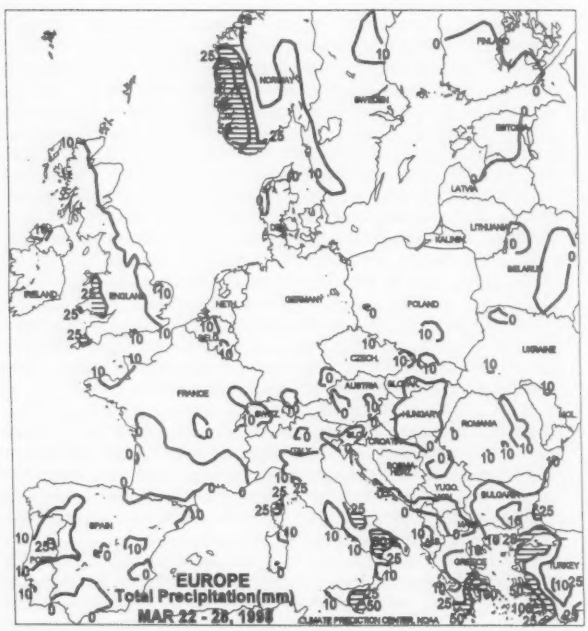
AUSTRALIA: Dryness favored summer crop maturation and harvesting.

SOUTH AFRICA: Heavy rain returned to the corn belt, keeping late-planted summer crops well watered.

SOUTHEAST ASIA: Showers benefited main-season rice in Java, while scattered showers provided some drought relief to stressed second-season crops across the eastern Philippines.

SOUTH AMERICA: In Rio Grande do Sul, Brazil, showers continued to slow soybean harvesting. Drier weather continued to benefit summer crop harvesting in central Argentina.

NORTHWESTERN AFRICA: Light showers brought temporary relief to winter grains in Morocco, previously stressed by prolonged dryness.

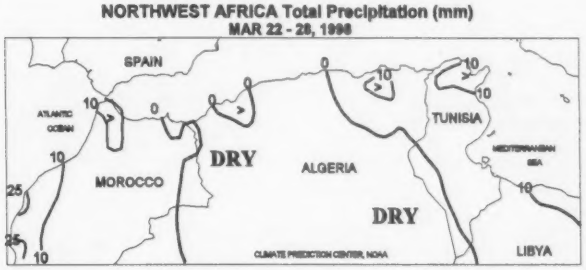


EUROPE

Weather conditions were mixed for crops throughout most of Europe. Cooler weather prevailed over winter grain areas in France, Germany, and Italy's Po Valley, slowing winter grain development. Extreme minimum temperatures fell below freezing (-2 to -8 degrees C) in these areas, increasing the potential for some damage to early-blooming fruit trees as well as early-flowering oilseeds in southwestern France. Furthermore, generally dry weather (precipitation amounts ranging below 10 mm) in these areas allowed spring grain planting to progress without delays. In England, mild weather (weekly temperatures averaging 2-3 degrees C above normal) and light precipitation (around 10 mm) continued to promote rapid development of winter grains. In Spain, dry weather has persisted in central and southern areas since February 10, lowering topsoil moisture. Rain is needed for winter wheat, in or nearing the heading stage in the south, and for the early development of spring-sown crops. Farther east, light showers favored winter grains in central and southern Italy. However, extreme minimum temperatures fell below freezing (-1 to -2 degrees C), which may have caused some damage to newly emerging summer crops. Elsewhere, unseasonably cold weather continued over eastern Europe, where weekly temperatures averaged 3 to 7 degrees C below normal. The cold weather slowed further greening of winter grains. Extreme minimum temperatures in the region ranged from -4 to -10 degrees C. The cold weather extended southward into Greece and was accompanied by rain (10-24 mm), slowing cotton planting.

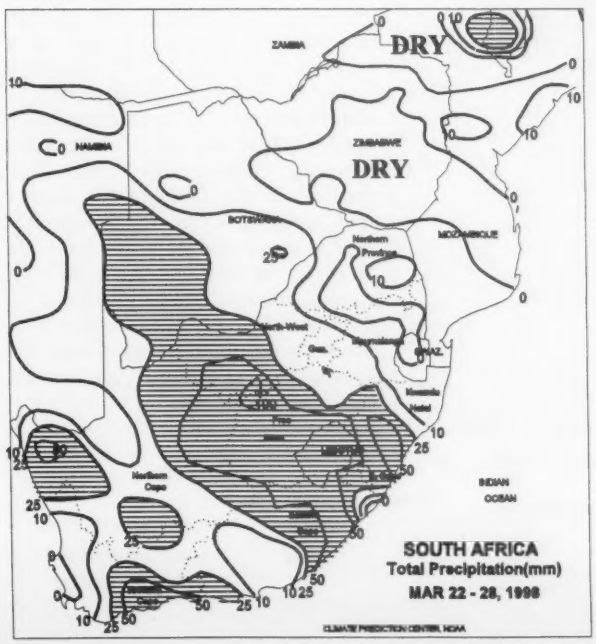
FSU-WESTERN

Unseasonably cold weather continued over major winter wheat-producing areas of Ukraine and southern Russia (southern Black Soils Region, lower Volga Valley, and the North Caucasus), keeping winter grains dormant in most areas. Typically, winter grains break dormancy in these areas in early April. Weekly temperatures averaged 1 to 3 degrees C below normal in most areas. Lowest temperatures ranged from 0 to -5 in extreme southern areas (southern Ukraine and southern North Caucasus region in Russia), and -5 to -12 over remaining winter grain areas. Light rain and snow (generally less than 10 mm liquid equivalent) accompanied the cold weather in most areas. The cold, wet weather pattern hampered early-spring grain planting in southern Ukraine and the North Caucasus region in Russia. In cotton-growing areas of Central Asia, reports indicated that planting has begun in Uzbekistan. Typically, most of the cotton crop is planted from mid-April through May. Mostly dry weather favored fieldwork for early planting, while unseasonably warm weather increased soil temperatures for germination.



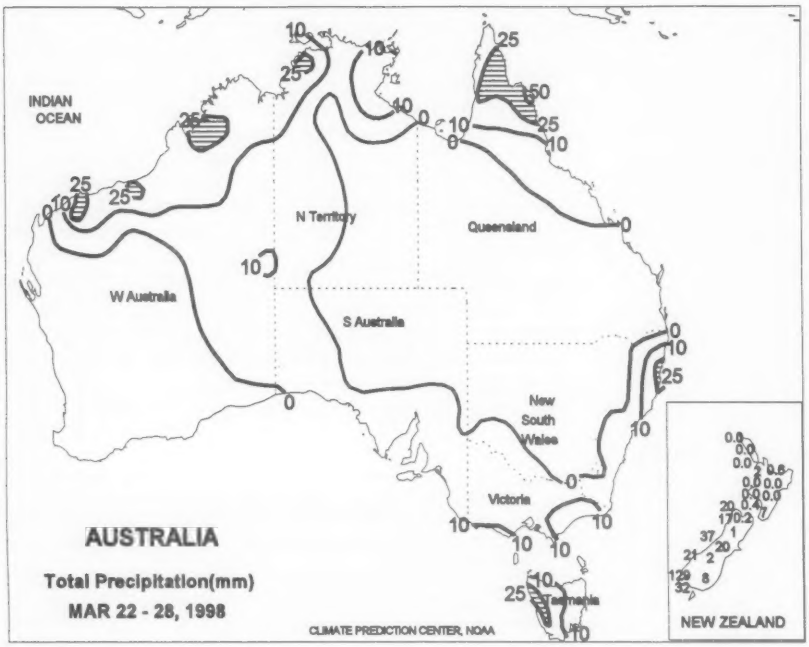
NORTHWESTERN AFRICA

Winter grains were likely advancing through the reproductive phase of development in most areas. Light showers (10-25 mm) dampened winter grains in southern Morocco, bringing temporary relief to winter grains, previously stressed by prolonged dryness. Light, if any, precipitation fell farther north in northern Morocco. Much-above-normal temperatures preceded the rain in Morocco, increasing heat stress on crops. Weekly temperatures averaged 4 to 7 degrees C above normal in Morocco. Farther east, drought continued in winter grain areas of western and central Algeria, causing further declines in crop conditions. Although scattered showers (3-12 mm) moistened topsoils in eastern Algeria and northern Tunisia, the precipitation was insufficient to meet the high moisture demands of the crop. As a result, crops had to rely on limited moisture reserves to sustain normal development. Moisture reserves remain limited for crop growth in all areas, and additional moisture is needed to prevent further declines in crop conditions. Weekly temperatures averaged 2 to 4 degrees C below normal in eastern Algeria and Tunisia, lowering heat stress on crops.



SOUTH AFRICA

Widespread, locally heavy rain (25-50 mm or more) developed late in the week over the western corn belt. The moisture, which gradually spread eastward, aided late-developing corn, sunflowers, and other summer crops, including sugarcane in Kwazulu-Natal. Prior to the rain, seasonable temperatures helped advance crop development. This was especially critical for corn in Free State and Northwest where late plantings increased the risk of frost damage.

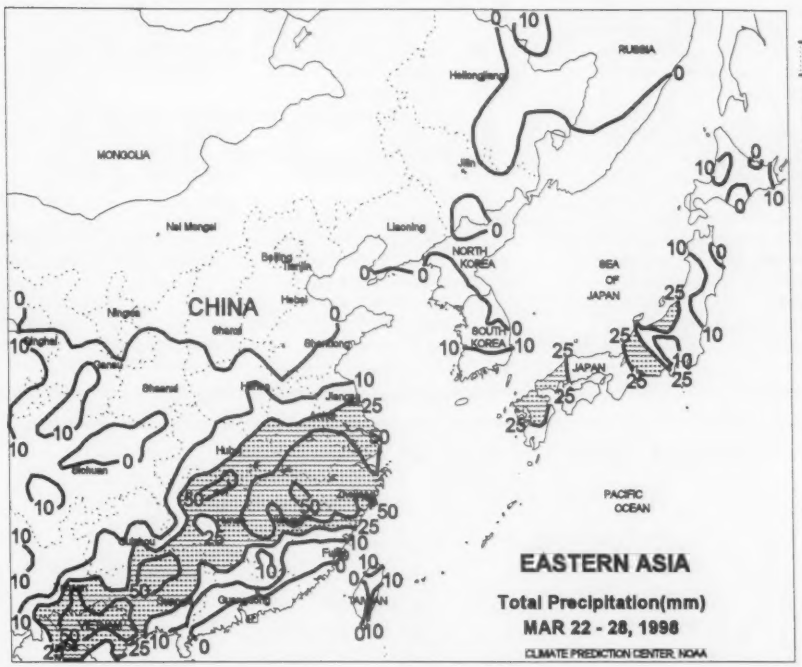


AUSTRALIA

A warm, dry pattern remained entrenched over the east, with temperatures averaging 2 to 4 degrees C above normal in primary growing areas of Queensland and New South Wales. Conditions continued favorable for maturing sorghum and cotton. However, the current drying trend in coastal sugarcane areas has reduced moisture for late sugarcane growth. Elsewhere, scattered, light showers (less than 10 mm) grazed the southeast coast, failing to provide significant moisture to the winter grain belt. No rain fell in West Australia's agricultural zones. In New Zealand, dry weather dominated the main pasture and crop production areas.

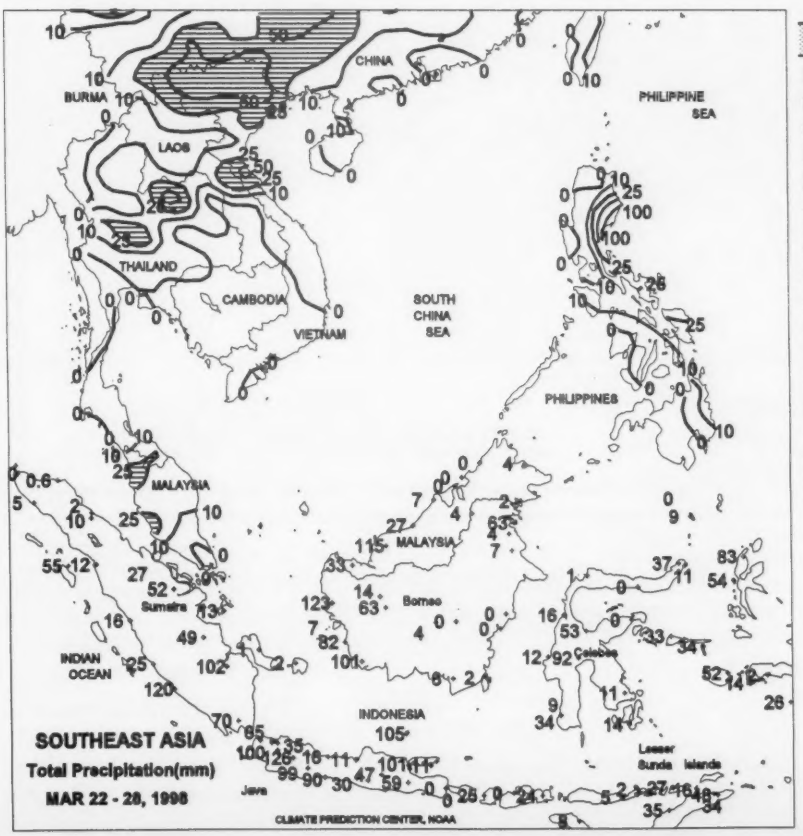
SOUTH AMERICA

Showers (30-70 mm) continued to slow soybean harvesting in Rio Grande do Sul and Parana, Brazil. Drier weather is needed to reduce disease problems for mature soybeans. Elsewhere in southern Brazil, moderate showers (10-60 mm) caused minor harvesting delays. According to reports as of March 26, Brazilian soybean harvesting was 19 percent completed, compared with 30 percent last year. In northern Argentina, showers (10-50 mm) slowed early cotton harvesting. Scattered, light showers (5-25 mm) caused only brief delays in summer crop harvesting across central Argentina. Isolated near-freezing temperatures on March 25 and 26 did not harm maturing summer crops in Buenos Aires and La Pampa provinces. According to reports as of March 20, Argentine sunflower, corn, and soybean harvesting was 58, 12, and 1 percent completed, respectively.



EASTERN ASIA

Early-week cool weather (lows just above freezing) lingered across the North China Plain, slowing winter wheat growth. Rainfall (15-50 mm, with scattered amounts greater than 75 mm) was confined to the Yangtze Valley and the southern North China Plain (southern Henan, Anhui, and Jiangsu). Drier weather (less than 10 mm of rain) favored early double-crop rice transplanting across extreme southern China.



SOUTHEAST ASIA

In Java and southern Sumatra, showers (40-80 mm or more) continued to benefit main-season rice. Scattered showers (10-50 mm, with isolated amounts greater than 100 mm) provided some drought relief to the eastern Philippines. Dry weather continued across the oil palm areas of eastern Malaysia (Sabah). Timely rain is needed during the next month for main-season rice planting. Typically, main-season rice planting occurs from April to June across the Philippines. In Thailand, hot weather (temperatures averaged 1-3 degrees C above normal) was tempered by scattered, light showers (5-34 mm). Dry weather reduced moisture supplies for oil palm across eastern peninsular Malaysia, while moderate showers (10-40 mm) prevailed in the west.

The *Weekly Weather and Crop Bulletin* (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the *Weekly Weather Chronicle*. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53rd Congress, 3rd Session. NOAA is responsible for managing, printing, and distributing the bulletin. The contents may be reprinted freely, with proper credit.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center
Managing Editor ..... ***Douglas Le Comte*** (202) 720-7919
fax (202) 720-1455
Editor ..... ***Brad Rippey*** (202) 720-1444
Meteorologists ..... ***Jeff Savadel and Brian Morris***
Special Requests ..... (202) 720-7917
Subscriptions ..... ***John Kopman*** (301) 763-8227, ext. 7534
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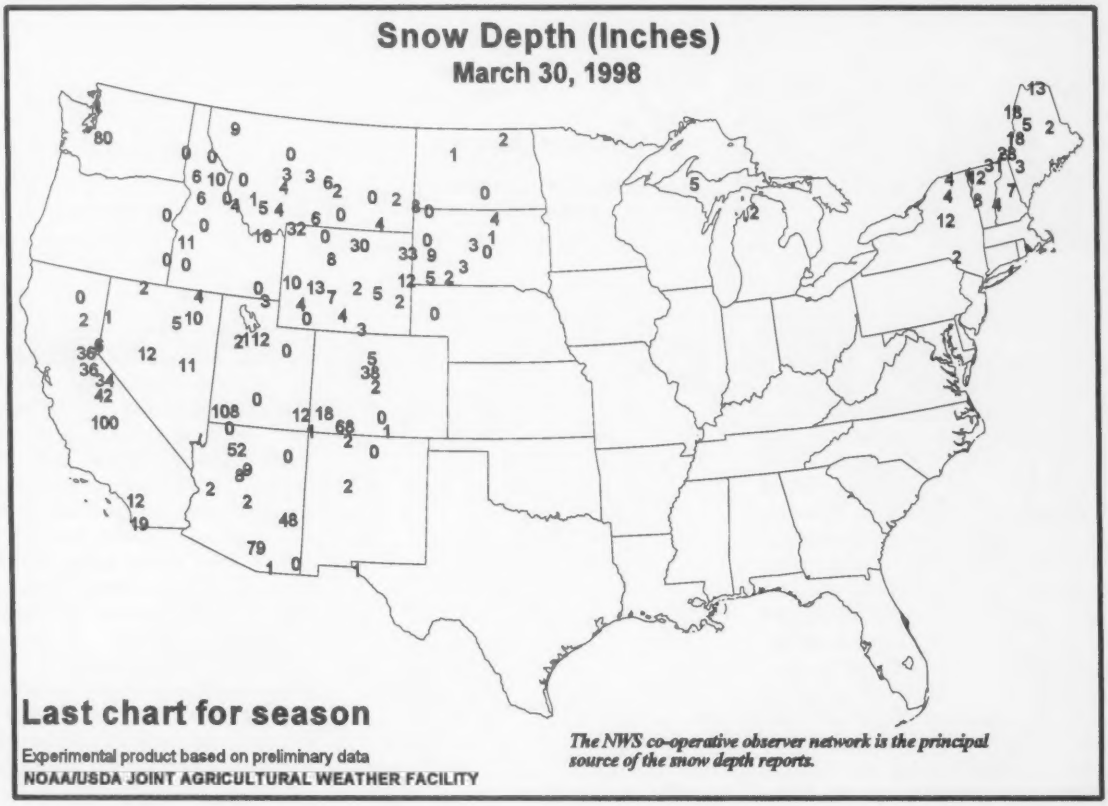
Snow Depth (Inches)
March 30, 1998
Last chart for season
Experimental product based on preliminary data
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
The NWS co-operative observer network is the principal source of the snow depth reports.

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